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EDITORIAL—SOME HIGHLIGHTS

I. General Economic Scene

State

Fifth Plan: The State Planning Commission has forwarded to the Government the first draft of the Fifth Five Year Plan along lines set forth in the last issue of the Bulletin (page 153). This first draft is divided into two parts. Part I consists of 8 chapters dealing with aims and objectives, development over previous plan period, present economic and social situation, general approach to the Fifth Plan, Plan in outline, financial resources for the Plan, implementation and District Plans, and Part II with 27 chapters outlines the sectoral programmes in power, transport and communication, agriculture, animal husbandry and dairy farming, fisheries, forestry, mineral development, large and medium industry, village and small industry, health, family planning, nutrition, water supply and sanitation, education, science and technology, cooperation, rural development, urban development and town planning, tourism, manpower, employment and labour welfare, development of backward classes and harijan welfare, social welfare and other programmes. The draft is now being examined by working groups of secretaries to government with particular reference to project formulation on the basis of the draft. The results will be transmitted to the Commission in June on the basis of which it will finalise the draft Plan and present it officially to the government by the end of July. This is rather a tight time table which the Commission is aiming to maintain.

Perspective Plan: The report of the working group on Tourism recommends an outlay of Rs. 185 crores for development of tourism in the State during the period 1972–84. The State Tourism Corporation should develop the manufacture of tourists goods and souvenirs like Thanjavur plates, Kancheepuram silks, leather, brass and pith articles. 50 deluxe coaches and 10 units in beach resorts are to be developed together with tourist information offices in each district and in other States. The development strategy is based on one third of the 1 million tourists coming to India in 1980 visiting Tamil Nadu and for this our large spectrum of tourist attractions notably the towering temples and our hill resorts should be publicised and accommodation and transport facilities improved. The present accommodation of 3,620 beds in 42 hotels plus 338 beds in the State Tourism Corporation bungalows and 86 beds in those of the Indian Tourism Corporation are to be increased by a new pattern of increased beds ranging from decent dormitory to air conditioned varieties. Youth hostels are also to be increased and so the needs of low income, middle income and high income tourists will be met. The public sector will be responsible for developing 25 per cent of the accommodation, the rest being left to the private sector. It is also recommended that Tamil Nadu Tourism staff should travel to other countries to publicise our facilities.

District Plans: Further to the six District Plans summarised in the last issue

of the Bulletin, five other district plans, those relating to Nilgiris, East Ramanathapuram, West Ramanathapuram, North Tirunelveli and South Tirunelveli are being set forth in this issue. The Perspective Plan for the Nilgiris Development District proposed a total outlay of Rs. 259.40 crores composed of Rs. 75.3 crores State, Rs. 7.5 crores Central, Rs. 2.8 crores local bodies, Rs. 138.7 crores public sector, Rs. 35 crores private sector. Power has the largest programme and allocation of Rs. 120.5 crores followed by cooperation (Rs. 22.3 crores) and agriculture, animal husbandry, cinchona, forestry and fisheries (Rs. 38.4 crores). Among the new projects proposed are a scheme for the extraction of Dioseganic, a scheme for extraction of Geranium oil, a scheme for extraction of oleorin from ginger. Its concluding chapter highlights the major features of the plan—Ootacamund has the highest allocation of the sub-regions, agriculture predominates in Gudalur, plantations and their industries in Ootacamund, and housing, power, road development, tourism, the problem of unemployment and tribal welfare—are singled out for special treatment.

The perspective plan for East Ramanathapuram Development District divided into 2 sub-regions proposes an outlay of Rs. 203.00 crores, with about 50 per cent to be used for the development of agriculture and allied activities. It proposes popularisation of the package of practices under IADP for HB 3 cumbu and vegetables for region I, and paddy and other cereals for region II, survey and reclammation of coastal lands in region I, improved irrigation facilities and modernising of Vaigai scheme in region II, development of coconut and cashew plantations and starting of small and medium industries, such as a sodium plant at Karaikudi, a tyre and tube plant and master cycle plants in the district. Animal husbandry has an allocation of 6.5 per cent, while education and drinking water have a low priority. Harijan welfare has a good allocation of Rs. 6.15 crores. The programme proposes to generate employment for 7,25,000 persons during the perspective plan period.

The perspective plan for West Ramanathapuram Development District divided into two regions envisages an outlay of Rs. 118.69 crores, with Rs. 60.81 crores for agriculture. In both districts the emphasis is on IADP in paddy, chillies, cotton, and cumbu, soil and water conservation programmes and further development of irrigation. For animal husbandry Rs. 6.78 crores are provided for poultry and cattle development. Rs. 20.69 crores are provided for further development of matches, fire works, printing aud industrial cooperatives in region I and handloom and cement, tyre and tube and calcium carbide industries in region II. Harijan welfare is well planned while other services like health, sanitation and education are provided at a rather low level.

The perspective plan for North Tirunelveli Development District divided into 5 sub-regions proposes an outlay of Rs. 281.91 crores. Industries take a major share at Rs. 188.62 crores for a thermal plant at Tuticorin, fisheries, industrial estates, salt based industries in in sub-region I (a), cotton based industries in sub-region I (b), bricks and mat weaving in region III and sugar cooperatives and textile mills in region IV. The agriculture programme calls for minor irrigation works, soil conservation and anti-erosion schemes, the development of coconut and cashew nuts in sub-region II, paddy, sugarcane and bananas in sub-region III and paddy in sub-region IV. The proposals on education and health follow closely the Task Force recommendations adapted to local conditions.

The perspective plan for South Tirunelveli Development District divided into 5 sub-regions proposes an outlay of Rs. 110.80 crores. Irrigation, power and health account for a major part of the outlay at 13.56, 12.05 and 19.19 per cent respectively. Agriculture has 10.53 per cent and animal husbandry 6.34 per cent allocated to them. In addition to various irrigation programmes in all sub-regions except sub-region I (a), development of horticulture and plantations in sub-region II, paddy in sub-region III are proposed. The industries proposed include five major ones—asbestos, tiles, potassium chloride, textile mills and industrial estates, 24 small industries and 20 large industries. The health allocation is so large because the plan is to establish full fledged facilities in the district which is lacking in most of it.

1973-74 Budget: The annual budget presented to the February session of the State Assembly is a development oriented document within the constraints of the present economic situation in the State. (i) It begins with reporting a sizeable surplus on current account amounting to Rs. 1.80 crores for 1972-73 mainly due to the buoyancy of sales taxes and excises, including a larger share of Central taxes and a good harvest. The budget was able to absorb an increase in expenditures of Rs. 44 crores over the estimates. (ii) For 1973-74 the budget estimates involve Rs. 465.56 crores as income and Rs. 465.07 crores as expenditure, resulting in a small surplus of Rs. 49 lakhs (in contrast to the West Bengal budget also just published involving a deficit of Rs. 13.94 crores and the deficit of Rs. 24.19 crores of the Rajasthan budget, the Rs. 45.61 crores deficit of Bihar and Rs. 12 crores deficit of Mysore). The State budget propose no new taxes for the year. (iii) The Plan expenditures will be Rs. 126.44 crores for this last year of the Fourth Plan. The original plan estimates for 1972-73 and 1973–74 were Rs. 116 crores and Rs. 120 crores (see Vol. II No. 2 page 4 and Vol. III page 84). But by economising on non-plan expenditures, the approved plan expenditures for the two years have been raised to Rs. 120.27 crores for 1972-73 and Rs. 126.44 crores for 1973-74. This is the best that the State could do which will result in a total Fourth Plan expenditure of Rs. 546 crores against the Rs. 575 crores that the State was requesting and Rs. 625 crores originally planned for in the Draft Fourth Plan of the State. Union assistance to the State is steadily declining (see Vol. II No. 12 pages. 14) from several points of view. Against the Rs. 250 crores of Central assistance promised and expected, only Rs. 202 crores have been made available. The percentage of Central assistance to the State in relation to total Central assistance has been declining from 10.8 per cent in the First Plan to a low 4.7 per cent in the current Plan. Out of Rs. 686 crores for all India industrial investment in the Fourth Plan, only Rs. 20 crores have been invested in this State. This is particularly worrisome at a time when the Union Government's industrial investments are low while its intervention in the State subjects of agriculture, education and health is constantly expanding. Here the question is whether the States should not be allowed to carry out their responsibilities in these fields and all resources in them channelled through the Finance Commission. Finally there is the problem of growing indebtedness of the State which has been commented upon in Vol.III page 157. All these call for a reorientation of the Centre—State financial relations at least for the Fifth Plan and which the Sixth Finance Commission should regulate. (iv) On the substance of State development during the last year of the Plan the important provisions made by the budget are: (a) an agricultural outlay of 22.36

crores (plus Rs. 14 crores being the loss on agricultural connections for the Electricity Board) for increasing food grains output beyond the 1972-73 total of 72.02 lakh tonnes; (b) in addition to the various legislative enactments on the State's land reform, forth coming government legislation to enable cultivating tenants purchase the lands they are cultivating and for this purpose a Tenants Financing Corporation to be set up to help the poorer tenants make the purchase; (c) the take over of the wholesale trade in food grain to be put into operation during the year; (d) an outlay of Rs 3 crores for link roads with the main roads for all habitations with more than 1,500 persons in addition to the similar sum spent last year; (e) the industries outlay which covers industries under way, namely, nylon, sodium hydro sulphate, tyre and BCY, with preparatory work on the industrial refinery at Tuticorin (Rs. 52 crores), the petro-chemical complex at Manali (Rs. 80 crores), polyester film plant (Rs. 13 crores), a refractories plant at Salem (Rs. 10 crores) and oil *exploration in the Cauvery basin; (f)* the Madras Aluminium Company (MALCO) to be nationalised and legislation to this effect introduced. Tamil Nadu Industrial Investment Corporation has an investment in MALCO of Rs. 115 lakhs in it of which 15 per cent is in equity shares and the nationalisation should be regarded as recognition of this fact and a means of stepping up production and ensuring proper distribution of this key metal; (the case for this nationalisation should be further reviewed with the appropriate Union Ministries); (g) for handlooms an outlay of Rs. 1.44 crores together with a renewed request to the Union Government to reserve production of dhoties, sarees, towels, bedsheets and bedspreads exclusively for the handloom industry and the regulation of yarn supply from all spinning mills to the industry; (h) on power there is little to add to what is said later except that the 200 MW Kadambarai hydro electric project cleared in February is to be developed; (i) legislation to be brought in to acquire all the seven private electricity undertakings; (this has lost some of its urgency except in so far it can make for rationalised distribution); (j) Rs. 50 lakhs towards the conversion of the Buckingham canal into a 33 feet wide and 6 feet draught waterway for its entire length of 100 miles within the State; (k) on health Rs. 41.17 crores to be spent (up from Rs. 38.91 crores for 1972-73), involving construction of 24 bed hospitals in Karur and Vaniyambadi, a 30 bed ward at Kasturba hospital, Madras, a 100 bed ward in the Coimbatore Medical College hospital, a 147 bed ward in Tirunelveli Medical College hospital, provision of ECG at 5 Taluk and 6 District headquarters hospitals and X-ray units in 10 Taluk headquarter hospitals, a 25 bed hospital at Arignar Anna hospital in indigenous medicine at Arumbakkam and Siddha wings in 10 Taluk headquarters hospitals; (l) education's outlay of Rs. 97.23 crores going up from Rs. 95.82 crores for 1972-73 which provides for the normal quantitative increase and awaiting the qualitative reform recommended by the State Planning Commission's Task Force; (m) a Harijan Development and Housing Corporation to be set up to finance the building of 10,000 houses out of the 80,000 harijan house sites which have been acquired; (n) other administrative measures which include increase in house rent allowance and paying into the provident fund of increased dearness allowances for Government staff, creation of Pattukottai as a district and the setting up of 3 labour legal advisory cells at Madras, Madurai and Coimbatore to help workers with Rs. 150 per annum with regard to the legal fees they may need.

Tamil Nadu's development status: The Economic Review published by the Government of Maharashtra provides a series of socio-economic indications for 18 States of the Indian Union and throws light on the comparative status of this State. In terms of per capita income at current prices in 1970–71, Tamil Nadu stands fifth at Rs. 644 after Punjab (Rs. 945), Haryana (Rs. 788), Maharashtra (Rs. 775), and Gujarat (Rs. 657). In terms of gross industrial output per capita in 1967 Tamil Nadu stands fourth at Rs. 244, after Maharashtra (Rs. 466), West Bengal (Rs. 389), and Gujarat (Rs. 367). In value added per capita in 1967 also Tamil Nadu stands fourth at Rs. 54, after Maharashtra (Rs. 120), West Bengal (Rs. 91), and Gujarat (Rs. 82). In the average daily employment of factory workers per thousand of total population in 1970 Tamil Nadu stands fourth at 10.7 after Maharashtra (20.2), West Bengal (18.8) and Gujarat (16.6). In industrial consumption of electricity, Tamil Nadu stands fourth at 74.9 Kwh after Maharashtra (105.9), Punjab (93.5), and Gujarat (90.2). In terms of per capita bank credit, Tamil Nadu stands third with Rs. 113.5 after Maharashtra (Rs. 221.1), and West Bengal (133.0). It is curious that education of the kind that we have in the Country does not have a direct relationship to any of the above economic indicators. Here Tamil Nadu stands third with 173.0 primary and secondary school students per thousand of population after Kerala (221.1) and Nagaland (208.0), the last two States being near the bottom of the economic development ladder.

Power: Further to the 40 per cent power cut imposed as of 1 February, reported in the last issue (page 159), from February 15 the Government has imposed (a) a 75 per cent cut for all industries including continuous process industries, (b) maximum consumption of 150 units for domestic use (c) a 15 per cent cut in essential services, (d) four hours of power supply (subsequently increased to five hours) to farmers, (e) cut of power to shops and show rooms after 8 p.m. and (f) restriction of cinema showings to 1 or 2 only a day. This drastic power reduction in the State is still based on the assumption that the South West monsoon will not be delayed so that there will be no need for a grinding halt in power supply during the critical months of April-May. As of February 15 when the further 75 per cent cut was imposed, all power supply sources amounted to 750 MW (Ennore 120 MW, Basin Bridge 35 MW, Neyveli 200 MW, Mettur 130 MW). The February 15 cut is based on the fact that out of the 225 lakh unit daily consumption, 2.5 lakh units are for street lighting now reduced to 1 25 lakh units, 1.3 lakh units for cinemas now reduced to 90,000 units, 8 lakh units for domestic consumption now reduced to 4 lakh units, while industry consumed over 50 per cent at 115 lakh units. The power demand in the State has grown from 110 MW 15 years ago to 1,500 MW today. Power consumption by agriculture pump sets has increased over the years and now uses a little over 25 per cent of the State supply. In February, two Rural Electrification Corporation (REC) Projects for 85 villages in Thanjavur and South Arcot districts were approved. When completed in 5 years, the 2 projects which cover 33 villages in Sirkali block of Sirkali Taluk and 52 villages in Mangalur block in Vridhachalam Taluk will energise 2,600 irrigational pumpsets, supply power to 100 small scale and agro—based industries and provide for 150 street lights and 9,804 domestic and commercial connections. We have a total of 19 REC assisted projects in the State, energising 35, 800 pumpsets and supplying power to 535 small scale industries. The total installed

capacity of the State is 2,200 MW, with 15 hydel stations generating 1,114 MW and the 3 thermal stations at Ennore, Basin Bridge and Neyveli providing the remaining 950 MW. The present serious situation arises out of a multiplicity of causes, most of which are general for the whole Country, as may be seen in the fact that there are cuts in all States, 80 per cent in Haryana, 75 per cent in Punjab, 50 per cent in Gujarat (both were lifted in March, thanks to January and February rains) and Maharashtra and 40 per cent in U.P. and 25 per cent in most other States. These causes relate fundamentally to bad planning at all levels. The current power deficit in the Country is 34.97 million units a day with about half, 15.8 million units a day in the South. The North, East and West sectors face a daily deficit of only 7.53 million, 6.5 million and 5.14 million units respectively. We have allowed power demands to outstrip supply in the State and relied on buying power from the neighbouring States to meet our deficit. In 1971-72 we purchased 25 million units from outside. The planning lesson from this was not drawn—namely that power, like heavy industry, is not a State subject and must be planned, designed and operated as a regional or national project. Another aspect of defective planning has been the imbalance between our thermal and hydel generation in the State, 58 per cent on hydel and only 42 per cent thermal and in a bad monsoon year (and this year the monsoon was only partially bad—that of the South West) which is now quite normal and should have been planned for, our hydel reservoirs have dried up as have those of our neighbouring States. A third aspect of defective planning is the delays in executing the projects—the second mine cut in Neyveli is still hanging fire, the execution of the Subramaniam Committee report recommendation and the oil firing of some of the Neyveli generators are taking so much time, the delay in comissioning Kalpakkam and all the long time lapses in the scrutinising and approval of the various thermal and hydel projects by the many Union authorities. A fourth planning error is not to have stockpiled the fuel for the thermal stations and allowed the Andhra disturbances to place the Ennore and Basin Bridge plants in a precarious position as far as their coal supply is concerned. Similarly the electricity board's internal planning and use of power resources once the failure of South West monsoon was known should have been more drastic and flexible right from July. And finally the planning aspects include proper care and maintenance of transmission losses which are still as high as 17 per cent. All these are lessons for the future and can and should be acted upon. It is necessary to treat power as a as a regional subject and keep supply ahead of demand.

The effects of the February 15 power cut are serious and wide ranging for the economy and for the state of employment. On the agricultural front there is a certain amount of disorientation. Electricity is available with interruptions during day time. The flour, coffee grinding and conventional rice mills and the tea estates have to cut back production. In all States there is a serious cut in production of fertilisers, caustic soda, cement and alminium. In this State, Mysore and Andhra Pradesh the losses will be heavy, with a decline in cement production of 7 lakhs, and in aluminium output of 10,000 tonnes. Nearly 3,000 small scale industries in Coimbatore district employing one lakh workers have had to close down wholly or partially. There is similar disarray in the Ambattur and Guindy estates. The textile mills are working only to 20 per cent capacity, yarn prices have near doubled from Rs. 25 to Rs. 40 per 10 lbs, the cotton crop coming in now (5 lakh bales

has no purchasers. The loss of production in the State for the four months February-June is estimated at Rs. 300 crores, composed of Rs. 52 crores in in spinning, weaving and textiles, Rs. 27 crores in motor vehicles, Rs. 25 crores in machinery, Rs. 20 crores in power and gas, Rs. 16 crores in industrial chemicals and fertilisers, Rs. 14 crores in grain and mill products, Rs. 12 crores in food products, Rs. 12 crores in sugar, Rs. 12 crores in rubber, Rs. 10 crores in electrical machinery, Rs. 10 crores in tanneries, Rs. 9 crores in rail road equipment, Rs. 8 crores in printing and publishing, Rs. 9 crores in chemical products, etc. Electricity Board earnings will be cut from Rs. 2 crores per month to Rs. 50 lakhs per month. Except for a few units which have their own generating sets, all other factories have laid off their workers for 3 to 5 days a week, involving about 5 lakh workers. Their annual wage bill, which amounts to Rs. 160 crores, will for these months of the lay off be reduced by 10 per cent. For the Country, the reduction in industrial production is likely to exceed Rs. 1,000 crores for this year.

Under these conditions both immediate and long term measures are needed to meet the power shortfall. Among the short term measures are: (a) as from February 22 Neyveli has stepped up its power output to 300 MW from 250 MW and even a further increase to 350 MW, partly by saving on lignite consumption of the briquetting plant, (b) as from February 24, Kerala has agreed to supply 3 lakh units per day for 120 days, of which 1 lakh tonnes is being used for cement production to make available cement supplies for Kerala's Idikki project, (c) coal supplies have been rushed to Ennore and Basin Bridge which were down to 3 day's stock, so that they can produce power regularly and in the case of Ennore increase to 190 MW, with the total of Ennore and Basin Bridge producing 275 MW, which can go upto 375 MW provided there is a steady supply of coal of 4,600 tonnes per day, (d) the Government has set up a 15 member committee with the Minister of Industries as Chairman and Ministers of Electricity and Labour and representatives of industry and labour to devise other measures to meet the emergency. On a long term basis, there is a general consensus in industrial circles that consortia of firms should be formed to set up private small generating power plants of 1(0 MW capacity. The South India Mill Owners' Association has called attention to 38 member mills applying to the Union Government to release foreign exchange for importing generators and has urged indigenous manufacturers of generators to allocate more units for distribution in this State. The State Electricity Board has placed orders with BHEL for the supply of power generation equipment to the Tuticorin Thermal Plant which will have 2 units of 200 MW each. The first MW unit is expected to be commissioned at the Tuticorin Plant in 1977-78 and the second unit in 1978-79. BHEL is also supplying the fifth unit of 110 MW at the Ennore Plant which should be commissioned by May 1974. Further BHEL is supplying Neyveli with the equipment for the conversion of 2 units of 200 MW each from lignite fuel to oil firing complex. There are also indications that the Union Government's studies are resulting in favour of the long standing proposal for the second mine cut at Neyveli and a second 600 MW thermal plant that could be set up there (see Vol II No. 6 page 5, 27 and 28). Fuel efficiency studies in paper, textile, tobacco, confectionery, matches and food programmes, as a means of reducing fuel demands, the use of back pressured gas, the use of this period of enforced idleness of the small scale units

to survey their market and book orders so that they can operate at full capacity from July, to mobilise the resources which would then be needed, to tend to the machines during this period of quiet, to improve the organisation of power generation and the full development of power as a regional programme are other developments. In fact similar long term power programmes are being planned all over the Country. A long term power grid for the Northern States of Punjab, Haryana, U. P., Rajasthan, Himachal Pradesh, Jammu and Kashmir and Delhi with a regional board despatch centre in Delhi is being planned. By 1975 the Centre will function controlling the operations of inflows and outflows of power between the States. Existing thermal power stations are being run for a longer period than usual. Coal and spare parts are being provided to plants: captive plants of diesel sets are being permitted to be installed by private industries. Power generation schemes are being expedited. Research and development programmes are being planned for designing and contracting tidal power stations. The promising sites are Bhavnagar, with a potential of 466 MW, Naolakhi with 123 MW, Diamond harbour and Saugur with a potential of 56 MW each. Similarly wind power projects are being elaborated in South Rajasthan, Gujarat, Maharashtra any Mysore for setting up a cluster of wind mills for generating electricity and pumping water for irrigation or drinking purposes. These programmes would involve an outlay of Rs. 300 crores during the Fifth Plan. Another energy source which is being examined is our geothermal resources in Manikaran and Karol in Himachal Pradesh, the Ratnagiri district in Maharashtra and Sirguja district in Madhya Pradesh. In these areas where heat is available in the form of steam, power generation is possible through the steam being piped, directly to the turbine to generate electricity or if there is no steam hot water can be flashed onto steam over the ground for running factories.

Flood relief: Further to the plans and programmes of flood relief reported in the last issue (page 158), the Union Government has sanctioned Rs. 14.28 crores for flood relief in the State. For this year, Rs. 7 crores will be available and Rs. 7.28 crores during 1973-74. The most effective work has been in the clearing of the sandcast land. As of February 10, in the Bhavani taluk Rs. 14 lakhs was spent on clearing the sandcast lands. The farm lands at Tiruvambur in South Arcot district have now been cleared and the farmers immediately grew groundnut and ragi on them; 101 bull dozers being used to clear the sand over 10,000 acres in South Arcot, 1,800 acres in Coimbatore, 1,200 acres in Salem, 1,200 acres in Dharmapuri and 500 acres in Tiruchi. Over some 2,500 acres in Thanjavur and the above districts bull dozers could not be used and the clearing was done by hand. By July the whole area will have been cleared. In this clearance programme the department has not only moved expeditiously but rightly chose to do the job itself, rather than make cash grants to the farmers which might have been spent wastefully, leaving the land barren.

Water agreement with Kerala and other water programmes: The Parambikulam-Aliyar agreement concerning the Kerala-Sholayar reservoir is under discussion. Under the agreement, Tamil Nadu had to fill the Sholayar reservoir upto 2,663 feet by February 1st. This has not been done this year as a result of which there is a 79.5 million units shortfall in the generation capacity of the Kerala power system. While Kerala feels that the non-fulfilment of the agreement is due to diversion of the

waters from the Sholayar reservoir to the Parambikulam dam, Tamil Nadu has explained that this was due to the failure of the monsoon. It is important that the inter-State agreement and understanding on this agreement be maintained and developed. The other agreement on the Pandiar-Punnapuzha which are tributaries of the Chaliyar, an inter-State river, requires that Tamil Nadu construct a storage reservoir and power station on its territory and let the water back into the Chaliyar near the Kerala State boundry, so that Kerala can use the tail race water for its power generation. Now Tamil Nadu wants to utilise a portion of the water for irrigating Palladam and Avinashi in the Coimbatore district, which Kerala regards as a violation of the agreement. Alternative proposals are under examination and here again an early agreement is needed to meet our many needs in the State. A third problem, also a part of the Parambikulam-Aliyar agreement, is the provision of 1.3 tmc ft. of drinking water from Siruveni to Coimbatore, while Kerala is to have 2.5 tmc ft. of water in the Bhavani basin for the development of the Attapadi valley. Kerala now wants 5 tmc feet of Bhavani water which Tamil Nadu engineers point out will seriously affect the interests of the lower Bhavani area. In this case a compromise can be reached on Kerala's demand in order to meet the urgent needs of the Coimbatore people for drinking water.

The Tamil Nadu Water Supply and Drainage Board is raising a Rs. 5 crores 15 year debenture loan to meet part of its expenses on water and drainage schemes. Its long term programme outlined as part of the perspective plan in Vol. II No. 9 pages 32-35, calls for large financial resources needing institutional assistance. A part of this programme is the Rs. 2.18 crores Palar water supply scheme, where the 2 wells and infiltration galleries will supply 58 million gallons of water per day to Alandur, Pallavaram, Tambaram, Pammal, etc. In Alandur alone 4,000 taps are being set up to supply protected drinking water.

Housing: The Tamil Nadu Housing Board has contracted with LIC for Re. 1 crore package loan for construction of 1,070 tenements/houses for the low income group. Under this 'Own your house scheme' a down payment of one tenth of the cost of the house is made and the balance paid in 120 monthly instalments. The programme includes house construction for fishermen living on the shores, for building on the sites assigned to the homeless, for teachers' houses, etc. As of at the end of March, 7,818 new tenements with modern amenities have been constructed to replace 24 slums in the city. In February, 672 tenements were opened at Washermanpet at a cost of Rs. 52.52 lakhs, each tenement providing a living room, a kitchen, lofts, almirahs, balcony, bath room, and water closet. The monthly rent is Rs. 15 involving a subsidy of Rs. 30,000 per mensum. The State programme consists of 87 such schemes in which 29,179 tenements will be constructed at a cost of Rs. 2465 crores.

Panels and Boards on Labour matters: The Government has appointed a panel on workers' participation in the management of factories in the public and cooperative sector, another committee on minimum wages for farm labour to report in six months, and a board for organising and training in trade union leadership and conducting refresher courses for labour welfare officers. It is also proposed to set up a statistical wing to collect data and conduct research on workers' problem Further the Government has set up an Arbitration Promotion Board to popularise the use of voluntary arbitration in settling

industrial disputes. The Board will review periodically the extent of acceptance of voluntary arbitration by employers, and workers, maintain a register of persons who can act as arbiters for different industries and areas, lay down norms, fees and procedures for arbitration, advise the parties on arbitration and the avoidance of litigation, develop principles for deciding what issues are of local nature or are general, what involve new rights or heavy financial stakes and advise Government on steps it might take to promote voluntary arbitration. This group of measures will, it is hoped, promote the much needed industrial peace in the State (see last issue of the Bulletin page 197).

National

Budget for 1973-74: The Union budget introduced in February in the Lok Sabha is a sound transitional fiscal instrument - pointing the way for the transition from the last year of the Fourth Plan to the major aims and strategy of the Fifth Plan, taking into account current constraints. (1) Its overall financial magnitudes represent an element of continuity. The receipts on current account are Rs. 4,831 crores and expenditures Rs. 4,752 crores, yielding a surplus of Rs. 79 crores. The receipts on capital account are Rs. 2,460 crores and expenditures Rs. 2,874 crores yielding a deficit of Rs. 414 crores, with the overall deficit at Rs. 335 crores. The 1972-73 revised estimates show on revenue account Rs. 4,628 crores as receipts and Rs. 4,591 crores as expenditures, with a small surplus of Rs. 37 crores, and on capital account receipts of Rs, 2,652 crores and expenditures of Rs. 3,239 crores, with a huge deficit of Rs. 587 crores, and a net deficit of Rs. 550 crores. Thus last year's deficit has more than doubled over the budgeted figure of Rs. 252 crores and the hope expressed in Vol. III page 12 of the Bulletin that the deficit will stay within the budgeted figure has not been realised. This means that with the increased capital and revenue receipts of Rs. 718 crores, a total of Rs. 1,617 crores or 15 per cent more than the budget has had to be spent mostly on non-plan and probably non—development expenditure last year. The major such expenditure items are known— drought relief, flood relief, emergency rabi programme and pay and dearness allowance increases. This is being brought under fiscal control for this year through increased taxes, though the deficit and possibly taxes will increase when the third Pay Commission reports. The real remedy is for the Plan to provide for the impact of natural calamities; (2) the tax measures proposed to reduce the overall deficit of Rs. 335 crores are aimed at promoting growth, exports, import substitution and reducing consumption of the upper and middle classes. The new taxes and other fiscal incentives are thus, to the extent a budget can, growth and social justice oriented, with the prospect of continuing inflation acting as a possible break on both. The income from the new tax proposals will yield Rs. 292 crores during the year, of which Rs. 42 crores will accrue to the States and Rs. 250 crores to the Union Government, reducing the overall Union deficit from Rs. 335 crores to Rs. 85 crores. This deficit of Rs. 85 crores will increase to some Rs. 250 crores when the Third Pay Commission recommendations are implemented and the food subsidy needs for which an inadequate provision of Rs. 130 crores is made are met, unless further taxes are levied. The tax measures include acting on the Wanchoo Committee recommendation to plug the tax loophole of the Hindu undivided family having one or more members with independent incomes or wealth

exceeding the exemption limit, who will be taxed at higher rates of income and wealth tax, and increasing the time period of the capital assets held from 24 to 60 months which are sold or transferred and capital gains made which are entitled to tax concessions. Following the Raj Committee, the partial integration of agricultural and non-agricultural incomes is effected, under which non-agricultural incomes will be taxed at rates applicable to the aggregate of both incomes. This, it is hoped, is the prelude to full taxation of agricultural incomes and wealth which is a State responsibility. The increased exemption limit of Rs. 2,000 (as against the past Rs. 1,000) of life insurance premia and provident fund, the raising of the limit of concessional income tax rates for widely held companies from the past Rs. 50,000 to Rs. 1,00,000, and the inclusion of management compensation under the tax net are further attempts to use the tax instrument to promote social justice. The tax instrument has still left untouched the parallel economy and for this the Wanchoo Committee proposals on black money must be acted upon. On the other hand the tax increases which are the major revenue raisers (Rs. 156 crores from increased customs duties and Rs. 117.57 crores from increased excise duties) involve increased taxes on cigarettes, petrol, cotton, art silk and synthetic fabrics, domestic appliances, steel, aluminium products and a whole list of consumers durable luxuries. The use of auxilliary duties for these additional customs and excise levies in place of the previous concept of regulatory customs and excise duties is honest in that their justification is just the raising of revenue. While the rise in consumer prices as a result of the excises is likely to be moderate and in any case will not be on the poor section, the customs increases particularly on machinery and excises on non-ferrous metals will push up production costs seriously. (3) growth will be helped by the 20 per cent initial depreciation allowance for a selected list of industries and by the non-increase in corporate taxes, while granting certain concessions to small companies. Along with the preferential treatment to industries set up in backward areas, and the tax concessions to R & D and export market production and development, should further strengthen the industrial revival under way. (4) The total Plan outlay for the year is increased to Rs. 4,356 crores from Rs. 4,011 crores last year, the Central Plan increasing by Rs. 137 crores to Rs. 1,924 crores and the state Plan assistance by Rs. 220 crores to Rs. 2,844 crores. This 9 per cent increase in total Plan outlays is, however, nullified by the equivalent price rise during the last year. The liquidation of the State overdrafts along lines proposed in Vol. II No. 3 page 5 and No. 7 page 2 is sound. In addition, Rs. 150 crores is provided for advance action on the Fifth Plan, Rs. 110 crores for special accomodation to the States and Rs. 100 crores for natural calamities. (5) The 1972–73 special programmes on employment (Rs. 60 crores), primary education expansion (Rs. 30 crores), slum improvement and rural home sites (Rs. 20 crores) and rural water supply are being continued with the same provision of Rs. 125 crores. Provision for key core areas is increased (from Rs. 88 crores to Rs. 115 crores for power) (from Rs. 95 crores to Rs. 135 crores for fertilisers). The Differential Interest Rates scheme for helping low income persons in productive activities is to be extended from 163 industrially backward districts to 265 districts, including those in which SFDAs and MFAL are operating, together with increasing the income eligibility limit and loans ceilings for the borrowers. A special new programme of employment generation for 5 lakhs of educated unemployed which will also create durable assets, collect and

compile needed data and train the needed personnel is provided, with an allocation of Rs. 100 crores. (6) The budget refers to the prospects of declining foreign aid and its lesser utilisation and the need for further promotion of exports for which the deductable expenditure ceiling has been increased from 133.3 per cent to 150 per cent for widely held companies. On foreign aid the budget estimates the net flow of assistance for 1973-74 at Rs. 226 crores. Its estimates of net aid for last year is Rs. 329.90 crores, while the economic survey places the figure at Rs. 123 crores. This discrepancy is due to different modes of estimation—the budget figure including repayment of principal of Government transactions while the economic survey figure includes total servicing of both principal and interest and Government and private sector foreign aid transactions. This kind of needless discrepancy can and should be avoided. In any case the net aid for this year will dip even further. The budget is a fairly sound fiscal essay in the present situation of the Country. It is not, as pointed in last year's budget analysis, a development instrument, but it is making its contribution to growth, social justice and self—reliance. On the other hand, there is not enough evidence that every effort has been made to economise on non-plan non-development expenditure, there are no inbuilt safeguards against combating inflation and there is still lacking any move towards a wages and incomes policy on which the budget can be based, which is as much a social justice imperative as other redistributive measures. The States will be the first to feel the pinch of escalating wages and incomes, and it is in their interest to work towards and press for such a policy on which all budgets—Union and States — can be founded. The States face a special problem this year. The budget is based on the States raising an additional Rs. 127 crores from their resources. So far the State budgets presented to the Assemblies do not meet this requirement and though, as pointed out later after the Sixth Finance Commission report, the States will come out with their proposals, it is a burden in the drought and flood hit situation they face. Further the gross transfer to the States from the Union Government was Rs. 2,928 crores in 1972-73 (including grants and loans and the special assistance of Rs. 421 crores to clear their overdrafts with Reserve Bank). For this year the total transfer will be Rs. 2,223 crores, a fall of Rs. 705 crores to which should be added the Rs. 750 crores repayment liability. Allowing for the increase in their share of taxes and duties, the net reduction in the transfer to the States will be Rs. 718 crores. Taken together with the problematic nature of the extra resources they are expected to raise, there is a serious question whether there will be a real expansion this year in Plan expenditures in the States.

Railway budget : The railway budget for 1973-74 has basic continuities with that of last year. In both cases there is an increasing trend in income, expenditure, and dividend to general revenues and a decline in net surplus. Thus for 1972-73 the revised estimates of gross traffic receipts are Rs. 1,174 crores, expenses Rs. 998.42 crores, dividend to general revenues Rs. 163.18 crores, with the net surplus down by near one third to Rs. 12.40 crores. For 1973-74 the budget estimates provide for gross traffic receipts of Rs. 1,264.35 crores reflecting almost entirely the increases in freight rates and upper class passenger fares, working expenses of Rs. 1,066.73 crores reflecting increase in wage levels and prices of materials, the dividend to General Revenues of Rs. 172.64 crores and a net surplus of Rs. 25.01 crores against liabilities totalling Rs. 39.66 crores, result-

ing in a shortfall of Rs. 8.65 crores, which it is hoped will be made up by improved earnings and better operational efficiency. Second the rise in freight rates and passenger fares is proposed to cover the gap of Rs. 53 crores between income and expenditure, including the Rs. 20 crores to be spent on development fund works. These increases in freights and fares seem inescapable. Essential goods like foodgrains, salt and kerosene have been exempted from the freight increases. On the other hand the 8 per cent increase in the transport on sugarcane, iron ore, fertilisers, cement and iron and coal and even the 3 per cent increase on coal will increase the costs of production of all articles and will strengthen the inflationary trend in the Country. In the case of steel, cement and fertilisers there will be a further squeeze as prices in these industries cannot be increased without Government approval. And such approval will have to be given to keep the public sector firms from going further into the red. In the case of passenger rises, while the increase on upper class fares is obvious, the major share of the additional revenue of Rs. 26.20 crores to the extent of Rs. 21.25 crores will be from the third class passengers, though the fact that though the passenger tax levied during the emergency is now to be formally withdrawn, it is in effect consolidated in the new rises announced. Third, the development programme includes conversion of a number of metre and narrow gauge into broad gauge lines, opening a few new lines, increased production of wagons by 4,000 per year at Amritsar, Golden Rock and Samastipur, production of 750 coaches at the Integral Coach Factory during 1973-74 and similar increases in the production of diesel and electric locomotives at Varanasi and Chittaranjan. Together with better management of wagon movement and a return to normalcy in Andhra and other disturbed areas, the railways can contribute to expanding growth during the year and laying the basis for a spurt in the Fifth Plan.

Economic review: There is an air of robust realism about this year's economic survey. It sets the sights for 1973-74 rather high in relation to the 1972-73 performance, at 5 per cent overall growth, with agriculture recovering to 112 million tonnes, industry at 7—8 per cent and some downward movement of prices. The 1972-73 performance presented is grim, with overall growth at 1.5 per cent, food production declining to 100 million tonnes, foreign exchange reserves falling by Rs. 60 crores, alongside of acute power shortage, sharp rise in prices (to be reviewed later) and deficit financing of more than Rs. 252 crores on top of the Rs. 478 crores loans and the mammoth deficit of Rs. 738 crores for 1971-72. The constraints we face include the imbalance between aggregate demand and supply as it spills over from 1971-72 and the continued stagnation in commodity production in 1972-73. This means that during this year to attain the targets set forth (a) the domestic consumption of exportable commodities will have to be reduced (which is a good preparation for what should become policy in the Fifth Plan, if the objective of eradicating poverty is to be attained), (b) conspicuous consumption should be curtailed and the demand for luxury goods made to tail off, (c) tax reform must be effected to increase tax receipts, widen the tax base and use both direct and indirect taxes and other non-fiscal instruments to reduce conspicuous consumption, stop commodity speculation, mop up excess profits and track down and control the parallel economy, (d) money supply will have to be held down, (e) a climate for effective production should be created, particularly by improving the efficiency of public sector enterprises and providing

every incentive for creative private sector activities, and (f) the speedy translation of sectoral outlays proposed for the Fifth Plan. This programme for the year is supported by some positive elements. The agricultural front, which has witnessed a steady decline since the 7.3 per cent increase in 1970-71, (by 1.7 per cent in 1971-72 and a further decline in 1972-73), might pick up with rabi harvest. On the industrial front there is a return to the 1969 rate of 7.5 per cent, as unlike the 3.1 per cent registered in 1970, the first eight months of 1972 showed an expansion of 7.4 per cent as noted in Vol. III page 95 of the Bulletin. In this increasing industrial front textiles and transport equipment have played the major role followed by chemicals, non-metallic minerals, rubber products and non-electrical machinery. The improved capacity utilisation in 1972 in these industries and some slight improvement in industrial relations should be extended and consolidated for this year.

A parallel survey of the functioning of 101 largest industrial firms by the Economic Times Research bureau shows that: (a) the public sector occupies a commanding position in this area and is expanding. The first 9 industrial giants in the Country —Hindustan Steel (Rs. 1,076 crores capital), FCI (Rs. 7,486 crores), Hindustan Aeronautics (Rs. 314.8 crores), IOC (Rs. 313.1 crores), ONGC (Rs. 282.4 crores), Fertiliser Corporation (Rs. 275.1 crores), HEC (Rs. 242.2 crores), BHEL (Rs. 233.3 crores), and National Coal Development (Rs. 222.6 crores)—are all public sector undertakings, and then comes TISCO (Rs. 201.5 crores), followed in the fifteenth place by TELCO (Rs. 130.8 crores). This is a pointer to the future of the relative importance of the two sectors. But the largest of our firms are not large in world terms. Thus our number one firm Hindustan Steel which was 175 in 1969-70 in the world heirarchy stepped down to 183 and IOC from 168 to 179. Bigness in world terms does not characterise our industrial operations. The survey also indicates that the private sector firms among the 101 grew fast in 1971-72 compared to earlier years, that their profitability in terms of sales, total capital employed or net worth remained stagnant, and even declined somewhat in 1971-72. The parallel RBI study of the performance of 701 companies in 1970-71 published in its December 1972 RBI Bulletin supports on a wider basis these conclusions. There was declining performance in these industries (private with a paid up capital of Rs. 5 lakhs and above), their overall rates of growth in production (value) being 5.4 per cent against 9.6 per cent for the previous year, in sales being 4.2 per cent against the previous year's 9 per cent. Their return on capital declined from 10.2 per cent to 9.7 per cent, the losing companies increasing from 177 to 195, the losses increasing from Rs. 6.97 crores to Rs. 70 crores. Even the improved rates of gross and net capital formation at 11.2 and 11.4 per cent compared to 8 per cent and 6.7 per cent of the previous year were due to the steep rise in inventory accumulation. 1970-71 was industrially a poor year.

The NCAER overall review of the economy for 1972-73 (which supplements, fills out and corrects the Government's economic review) estimates that on the food front the total production is likely to be 100 million tonnes against the food needs of 112 million tonnes for the 1972-73 population. The conclusion drawn is that this shortfall of 12 million tonnes can be met only by some imports, some restraint in consumption, some reduction of the enormous food wastage and foodgrains spoilage and a better distribution system. In fact the moral is even more pointed, and that is to achieve a better balance

between public investment and public consumption and to achieve the growth rate of 5.5 per cent (forecast in both the Fourth and Fifth Plans), the restraints on consumption must continue till August 1973. For 1973-74, wheat and rice production will go up to 74 million tonnes and if the monsoon is reasonable the other food-grains output will be 40 million tonnes, but if the monsoon is once more poor, it will be down to 33 million tonnes – so that the total production would be either 114 million tonnes or 107 million tonnes against the requirement of 115 million tonnes needed to feed this year's population. The production of raw jute for 1972-73 is estimated at 4.6 million bales, which is a fall of 1.1 million bales relative to the previous year, while domestic supplies will be 6 million bales against a consumption of 6.5 million bales, the difference having to be imported. Cotton output estimates for 1972-73 because of drought conditions in certain of the producing areas is likely to be lower than the previous year's 6.5 million bales, which has stopped the declining trend in cotton prices. The production of oil seeds was on the decline in 1972-73—the groundnut crop is expected to be around 4.5 million tonnes against 5.7 million tonnes for the previous year due to the drought conditions in Gujarat and Maharashtra, leading to the import of 1 lakh tonnes of rape seed and 50,000 tonnes of soyabeans and palm oil. Industry, as pointed out in Vol. III page 59 of the Bulletin staged a recovery, the first eigiht months of 1972 registering a 7.4 per cent rise compared to January-August 1971. This is also confirmed by the Economic Times research bureau study which for the first nine months of 1972 showed a rise of 7.1 per cent. Cotton textiles increased by 10 per cent in the first eight months of 1972 over the comparable period in 1971. The export of cotton yarn doubled in the period from 10.5 to 19.9 million kg. But the 1972 industrial recocovery is also misleading—because it is compared to 1971 which was a bad year, being 3 per cent for the whole year and 2 per cent during its first nine months. It should also be remembered that the major cause for the low growth rate in 1971 was the poor performance of textiles, steel and fertilisers, while in the rest of the industries growth developed at 7 per cent. This means that in 1972 the same trends in the other fields were not maintained because if they had been, the rate would be 10-12 per cent rather than 7 per cent. Also after a spurt in January and February 1972, production levelled off for the rest of the year at around 200 in the Economic Times seasonally adjusted index. Power shortages have also led to a reduction so that the overall industrial growth which could be 10 per cent is likely to be 6 per cent. Similarly though the exports of cotton yarn, jute products, textiles and engineering goods have shown a marked rise, the export growth is likely to be around 5-6 per cent. The NCAER survey concludes by emphasising the importance of good public sector performance as the private sector contracts, of some restraints on wage and salary rises, of the dangers from poor execution of the wholesale grains takeover decision, and the need to restrain the large and continuing rise in prices.

Fifth Plan and policies: The January meeting of the Finance and Planning secretaries from the States with the Union Planning Commission secretariat set the stage for the detailed elaboration by the States of their Fifth Plan on the basis of the decisions on the Approach Paper made by the National Development Council (see last issue of the Bulletin page 165). The States are to prepare their plans on the basis of twice their share of the Fourth Plan which was Rs. 6,000 crores, raised at

the time of mid-term appraisal to Rs. 7,000 crores. The States sector would thus be based on a total of Rs. 14,000 crores out of the approved outlay of Rs. 51,165 crores. Within this frame, the States are to draft their programmes which are the key to the attainment of the Fifth Plan objectives. Those relating to district planning, the minimum needs programme, the development of backward areas, the generation of employment, speedy execution of projects; particularly in the power field, the public procurement and distribution system, the programmes for small farmers, marginal farmers, drought prone areas and the whole social welfare programme depend on the States efforts. There are some uncertainties which should be speedily resolved. Are the minimum needs programme and the employment generation programme additional to the Rs. 14,000 crores? If they are not, with the rise in prices, the States will have no resources to make the special anti-poverty effort. Second, resource mobilisation is an area which is tied in with this whole planning exercise to which the Sixth Finance Commission holds the key. Until it reports, no State will be willing to show its hand on its resource mobilisation possibilities.

The cooperative industrial sector is to be expanded in the Fifth Plan beyond the sugar, spinning and lone fertiliser unit to include the manufacture of paper based on bagasse, of sugar machinery, tractors and other farm machinery and expanded spinning and fertilisers production. The paper plant is to be set up at Sangli by the cooperative sugar factory at a cost of Rs. 30 crores. In sugar manufacture, the total additional capacity proposed is 13.5 lakh tonnes at a cost of Rs. 209.5 crores. Similarly a large sized sugar machinery manufacturing unit is proposed to supplement the 12 lakh tonnes machinery produced by the private sector. In the area of spinning mills, 10 lakh spindles out of the total 25 lakh new spindles will be allocated to the cooperative sector at Rs. 100 crores. A tractor, unit with an annual capacity of 5,000 tractors at a cost of Rs. 4 crores, a harvester combine unit designed to produce 600 combines anually at Rs. 2 crores and 8 units to manufacture other agricultural machinery and spares are also planned. Finally two more fertiliser units and a phosphoric acid plant at IFFCO at a total cost of Rs. 240 crores are proposed This cooperative production programme for the Fifth Plan will meet the object of growth with an inbuilt social justice component and increase the number and impact of widely held companies in the Country. Another Fifth Plan target is the annual production of 145 million tonnes of coal. For this an investment of Rs. 350 crores has been proposed and should be made, in order to back up the thermal generation programmes of the States and different regions.

The evolving industrial policies that will influence the Fifth Plan at the planning and execution level are set forth in the new industrial policy announced in early February thus: "in the context of the approach to the Fifth Five Year Plan, the State will have to take direct responsibility for the future development of industries over a wide field in order to promote the cardinal objectives of growth, social justice, self-reliance and satisfaction of basic minimum needs". The evolving policy is marked by a successful reconciling of these basic but somewhat conflicting objectives and by elasticity and flexibility. The synthetic nature of the evolving policy is seen in its positive impact on larger houses and its declared preferential treatment of small and medium enterprises, both new and existing. The larger houses now know clearly what they can do and what they cannot do.

There is a clear cut list of industries in both the core sector and the heavy investment sector that they can enter and operate. The fuzziness about their role in the latter sector is now removed. The definition of the larger industrial houses has also been clarified and the discrepeancy between ILPIC an MRPT removed. Any unit whose assets including assets of interconnected undertakings exceeds Rs. 20 crores (compared to the previous limit of Rs. 50 crores) now becomes a larger industrial house. Under this definition, 28 more firms out of the 73 large industrial companies become larger industrial houses, in addition to the 20 houses identified by the Dutt Committee. The 19 groups of industries—core and heavy investment—in which they are invited to operate include metallurgical industries, boilers, electrical equipment, industrial and agricultural machinery, paper and pulp, drugs, tyres and tubes. The criteria used in listing these industries in appendix I to the February Statement are linkage with core industries, industries with long term export potential and those of importance to the national economy in the future. There is thus both attention to immediate production needs and the capacity to produce in the future. On the other hand the other industrial areas are reserved for the small scale sector (defined as investment in machinery and equipment up to Rs. 7.5 lakhs and in the case of ancillary industries Rs. 10 lakhs) and the cooperative sector is to receive special emphasis in industries which process agricultural products such as sugarcane, cotton, jute, fertilisers and mass consumption goods. The flexibility in the statement is seen in the provision that in the mass consumption goods sector reserved for the cooperative and public sectors small and medium enterprises, the larger houses will be allowed to participate if there are speccial factors in operation, such as economies of scale resulting in reduced prices, technological improvements, large investment requirements, substantial export possibilities or as part of modernisation. This is a large and wide set of determining criteria which should promote production particularly of wage goods and boost exports. The declaration regarding the joint sector which now ends speculation as to its meaning and content conforms to all the positive features of synthesis, clarity and flexibility. It is mainly a promotional instrument with emphasis on the State Governments entering into partnership with new and medium enterprises to guide them in developing a priority industry. Once more it is clarified that the larger houses and foreign companies cannot use this instrument to enter industrial areas from which they are excluded. And in all joint sector units, the Government will play an effective role in policies, management and operations, the application of which will be decided on the merits and needs of each individual case. The share of the public sector equity holdings will vary from 26 per cent, with the option still open for public financial institutions to convert their loans and debentures into equity along with the right to appoint the company directors. At what stage in the life of the firm, this option will be exercised will be known when the Union Ministry of Industrial Development issues guidelines for acting on this concept of the joint sector. The Tata proposal for learning management of the Joint Sector undertakings in the hands of the private sector (see Vol. II No. 10 page 12) has not been accepted but the precise meaning and nature of public control will be known in light of the guidelines to be issued and the manner in which they are applied. The case by case approach is pragmatic and flexible. The joint sector is also being used to restructure industrial houses by delinking the interconnections between

the industrial units of the larger houses. This may also involve some modifications of the MRTP Act to enable Government to force a company to unload shares held by a group or individual, to control inter corporate investments and appoint directors. And so the policies are now set for an assured investment climate, for stimulating growth in all priority industries envisaged in the Fifth Plan and to promote the diversification of holdings, stimulate the small operator and ensure adequate mass production of consumption goods at low prices, provided the policies are implemented effectively, speedily and really on grounds of merit—without any extraneous considerations.

Prices and grain take over : The price rise in 1972 reported in the last issue of the Bulletin (page 168) is confirmed in the final official figures released by the Government. The price increase in 1972 January-December was 12 per cent higher than in the previous year. The monthly average of wholesale price index for December 1972 was even higher at 13.7 per cent compared to the 3.4 per cent of the previous 12 months. The main reasons even as then reported have been the increase in the prices of food articles by 16.5 per cent (cereals +16 per cent, pulses +22 per cent, edible oils +4.23 per cent and sugar +28.5 per cent) and of industrial materials groups by 15.5 per cent (oil seeds +23 per cent, other raw materials +24 per cent). For January 1973, the general price index stood higher by 10.5 per cent as compared to a rise of only 4.4 per cent in the preceding 12 months. In February 1973 pre-budget speculation pushed up prices even further particularly in the Southern States. In Madras the combined effects of pre-budget speculation, the power cut, and dislocation of rail traffic through the Andhra region made for a special price spiral. Prices of all essential commodities increased by 10 to 30 per cent. Apart from these short term causes, the major factors are short supply of goods, increasing money supplies and the frightening deficit financing which reached for 1972-73 the awesome total of Rs. 550 crores. The NCAER survey points out that resources mobilised by heavy taxes and voluntary or fixed borrowing spent on public consumption is pure inflation. The money supply which stood at Rs. 7,450 crores in October 1971 was Rs. 8,564 crores in December 1972. Government which creates this situation must stop it. In February 1973 there was a jump in note circulation by over Rs. 150 crores, the note circulation having passed the Rs. 5,000 crore mark. Along with a revived demand by trade and industry for funds, the money markets have registered high call rates at 7-7½ per cent. The budget for the year should be an instrument to restrain money supplies and deficit financing. Apart from programmes, to increase production and relieve shortages, the effort to increase savings is important. A study by NCAER shows that middle class households save around 20 per cent of their income, which is more than double the propensity to save (7.9 per cent) of the household sector as a whole. Even so the consumption traditions and pressures on the household are high, acting as a constraint on saving. Around 50 per cent of the disposable income of the households are on food, followed by durable consumer goods, cycles and radios and by furniture, kitchen equipment, scooters and television sets and cars. The problem is to contain the consumption sector and induce savings. The RBI's 3 year rolling plan of branch bank expansion will be of help. Between July 1969 (when the 14 banks were nationalised) and December 1972, the public sector banks opened 5,432 branches of which 3,317 were in unbanked centres. Now the average population served by a branch

office is 37,000 and will by the end of this year be reduced to 32,000. This should increase the propensity to save of the household in the hitherto unbanked areas. Another positive savings trend is contained in the statistical report of the post office wherein one out of every 20 persons has a postal savings account, involving 25 million account holders with a total saving of Rs. 2,444 crores. All conditions are present for increasing savings, provided there is a consensus to restrain comsuption on the part of all those above the poverty line. Finally the wheat wholesale trade takeover announced in the Lok Sabha in February which will go into effect with 1973-74 rabi harvest becomes a key and practical issue in this programme to contain inflation. The basic 4 fold objectives of the scheme are public control over the marketed surplus, remunerative prices to the farmers, availability of supply to the poor sector at reasonable prices, economy in the costs of wholesale trading. The next stage in the programme would be to make the supply available not only at "reasonable prices" for all, but at prices which are within the reach of the poverty sector. The scheme itself involves: (a) a ban on wholesale trading in wheat all over the Country; (b) a single State wheat zone, cordoning off wheat surplus and consuming zones and banning all inter-State movement of wheat and wheat products except by FCI and public agencies; (c) retailers to operate under conditions in each State as to area of operation, the stocks that may be held, etc. as set forth in the license, with such retailers and consumers being permitted to buy directly from the growers; (d) purchase for the central pool by the FCI and State Department of Food and Civil Supplies; (e) uniform procurement and issue prices for wheat for the whole Country, also bearing in mind the need to keep down the subsidy burden; (f) use of cooperatives for distribution. In this regard the function of co-operatives is becoming crucial. They will be the major agency for rural distribution. They are being pushed into the production field as noted earlier under the Fifth Plan policy section. This means that the Union Government and the States must provide adequate funds for the programme of consolidation and development of cooperatives—which they are not doing now. There is lack of coordination between FCI operations and that of the cooperatives, between that of the Department of Food and Civil Supplies and the cooperatives—which must be remedied. The Fifth Plan envisages that the consumer cooperatives will be handling Rs. 700 crores in business by the end of the Fifth Plan, as against the Rs. 250 crores today. In addition to the support action of the Union and State Governments, the cooperatives must also improve their profitability and open branches in the areas where the majority of the poverty sector lives. The take over scheme will now go into operation. The States are working out the details of the scheme as reported in the last issue (page 170). There is an enormous task that now falls on them in taking over the entire marketed wheat surplus which after deducting the 5 million tonnes that will be taken up by retailers and consumers directly will be about 7 million tonnes out of the total output of 30 million tonnes this year. The FCI will need about Rs. 7 crores for this takeover, the cost of handling 1 million tonnes is Rs. 1 crore. Now everything depends on good, sound and orderly implementation and for this there should be cooperation on the part of everyone—the producer, consumer, retailer and the Government officer.

National Production Front

Steel: Further to the steel production performance analysed in the last issue of

the Bulletin (page 172), the increase in the output of saleable steel for 1972-73 will be over 4 lakh tonnes due to the higher level of production by the three units of Hindustan Steel, TISCO and ITSCO maintaining their 1971-72 level, with TISCO producing more due to the upgrading of its raw materials and improved operational efficiency. But like the industrial growth for last year, the HSL units performance is good against the poor performance for 1971-72 due to the collapse of the Rourkela roof. Bhilai has done well with steel ingot production by January 31 at 1.71 million tonnes compared to 1.59 million tonnes last year, saleable steel at 1.43 million tonnes against 1.24 million tonnes. Durgapur has maintained its production at 5.78 lakh tonnes of ingots and 3.72 million tonnes of saleable steel. The aggregate output of saleable steel is thus 2.41 million tonnes, the capacity utilisation being a poor 66 per cent mainly because of Durgapur's pulling down of the others. All have suffered from the effects of shortages of coke, power and railway transport difficulties. Bokaro is producing hot metal at 3,005 tonnes per day which is 15 per cent higher than the rated capacity of 2,640 tonnes. Pig iron production is now around 60,000 tonnes a month. The slow progress of the Kiribur iron ore mines of MMDC has forced Bokaro to contract for 50,000 tonnes of washed ore fines from the TISCO mines and an equal amout from Baloni mines. Here is a case where public sector units are not supporting each other. SAIL, whose inauguration was reported in the last issue (page 173) is emerging as an impressive example of modernised management. It has 4 full time directors and nine part time ones. Its autonomy will be in that it will be accountable to Government not for individual decisions but for performance and results. It is a new industrial culture for the Country, replacing what the minister calls the civil service culture pervading all the life including industrial life in the Country, and will have international linkages. Above all it should help to close the gap between plan and performance. The perspective plan for the industry aims at a target of 19 million tonnes by 1978-79 and 38 million tonnes by 1983-84 as noted in Vol. II No. 9 pages 9 and 10, which means that SAIL must ensure that during the Fifth Plan an annual additional capacity of 2 million tonnes and in the Sixth Plan 4 million tonnes are created. This means that it must help in achieving the expansion schemes of Bhilai, Bokaro, TISCO and the start of Vijayanagar and Vishakapatnam plants in the last 2 years of the Fifth Plan, so that by then the target of 19 million tonnes is achieved. For Rourkela and Durgapur, SAIL must ensure efficient functioning. Even so the achievement of the Sixth Plan targets calling for an annual addition of 4 million tonnes will involve SAIL examining whether entire reliance should be placed on the expansion of Bhilai and Bokaro to their aggregate capacity of 17 million tonnes—which would be 50 per cent of all steel output for the Country or whether given the inescapable time lags in their expansion, plans should not now be made for a second unit in Madhya Pradesh and Orissa, a new plant in Goa and the further expansion of Vijayanagar and Vishakapatnam. SAIL's international linkages should be used to make the necessary decisions to import equipment for this vast programme, where the rigid application of the principle of indigenisation will result in slowing down the programme. SAIL represents an opportunity to rid ourselves of divided counsels and delays in this vital production area on which so much of our Plan objectives—economic and social—depend.

Coal: The first effects of the coal mines nationalisation reported in the last issue of the Bulletin (page 173) has been

positive in production and labour relations terms. West Bengal mines production has increased by 5,000 tonnes daily to 68,000 tonnes and labour strength by 22,000 to 1,20,000 workers. There has had to be some administrative action to stop the moving of property from the 192 mines that have been taken over. In the West Bengal mines Rs. 140 crores are to be invested in the Fifth Plan to increase production from the current 16 million tonnes to 30 million tonnes and for the Country Rs. 350 crores will be invested to achieve the production target of 145 million tonnes. The ministry is, as suggested in the last issue of the Bulletin, planning the reorganisation of coal movement to ensure maximum utilisation of rail facilities. This will involve linking coal mines to major consumers like steel plants, cement plants, thermal power stations and railways so as to improve wagon movement by 15 per cent.

Tractors: Tractor production in the Country and imports have reached a point where as at April there is a stock of 20,000 assembled and unassembled tractors. The decline in tractor demand is essentially due to the price factor, as at present prices the cost of tractor tilling an acre is Rs. 30, which is the price charged by the agro-service centres. The result is a widening gap between manufacturing capacity which is 50,000 tractors a year and actual production to meet the demand which is 18,000 tractors in 1972-73. In fact, the total sales including the 8,000 imported tractors for 1972-73 is estimated at no more than 28,000. This situation has negative effects on agricultural mechanisation, where such mechanisation is needed for optimum production and employment. It has acted as a brake on the skilled employment generating agro-service centres. Under these conditions three lines of action should be examined. First the import of tractors, like those of motor cars, might be discontinued using the customs tariff tool. The tax on tractors which constitutes 32 per cent of its retail price might be re-examined and lowered. The tax is a multiple one—the customs duty on imported components, the excise duty and the Central and States sales taxes—the last varying from 1 per cent in Punjab to 9 per cent in this State. There is a case for lightening this heavy tax burden. If that were done tractors in the 25 to 50 h.p. range could be made available at a viable price to the farmer and increase the demand for tractors to 50,000 per annum which is the manufacturing capacity in the Country.

Fertilisers: Fertiliser production continues to be short of the total needed for effective agricultural output. The food output targets for this year and those for the Fifth Plan call for much expanded supply and production. Even as the bottlenecks at the farmers, end—limited purchasing power and irrigation facilities —are being alleviated through the priority the farmer receives in bank credit for his inputs and through improved water availability, the problem of expanding fertiliser production in the Country and relying less on imports becomes urgent. As far as imports are concerned, the international market for fertilisers is shrinking and prices are on the rise. Hence here again the problem of the price of fertilisers needs examination. There is no case for tax relief in this case and the Fertilisers Association's demand to remove the excise tax and leave the selling price ceiling where it is as a means of attracting fresh capital into the industry to increase its capacity is not really proven. The price can be brought down by more effective operation and capacity use. But price here is not the reason for sluggish production. And this area seems to be developing into one where the public sector will have to enter in a big way to meet the

urgent demands of agricultural production. And that is the direction in which the Fifth Plan proposals are moving.

Sugar: Sugar production for 1972–73 is expected to be 36 lakh tonnes compared to 31 lakh tonnes the previous year. The sugar policy involves various incentives to the growers includidg special rebates and higher procurement cane prices (see Vol. II No. 10 page 14 and No. 11 page 14). As against this official estimate which forecasts not only meeting the domestic demand for sugar in full but also yielding a surplus of 6,00,000 tonnes, the NCAER survey referred to earlier estimates that even if sugar consumption is held down and exports are entirely eliminated, there would be no carry over and there may even have to be some imports. Here again the absence of a reliable estimating mechanism for important cash crops like cotton and cane is less excusable and is an area where corrective action should be taken. These conflicting guesstimates are fertile grounds for speculative activity and speculative price rises.

Crude and gas: Further to the price situation on crude analysed in the last issue of the Bulletin (page 175), the second devaluation of the dollar will further increase the price of crude. The 1971 dollar devaluation led the companies to ask for an increase of 11 cents (U.S.) per barrel of crude imported into India. The producing States and the oil companies decided to increase the posted price of crude by 8.49 per cent so that the price of imported crude into the Country increased by 11 cents (U.S.) per barrel. The companies have also asked for a further price increase of 23.3 cents per barrel because of the hardening of world crude prices, the Teheran agreement, etc., as pointed out in the last issue's analysis. If the latest demand for a price rise is conceded because of the second devaluation, the increase would be between 13 to 15 cents (U.S.) per barrel. The need for forging ahead with our own oil programme is underlined by these developments. The Government will make a decision on the effects of the second devaluation during the current month. Indane gas is developing as a major fuel and energy source in the Country. By the end of 1972 it was marketed in 107 towns (which was a 50 per cent increase over the 71 towns at the end of 1971), with the customers increasing from 4.29 lakhs at the end of 1971 to 6.5 lakhs by December 1972. The number of cylinders in circulation went up from 7.7 lakhs to 10.4 lakhs during this period. This area is an important skilled employment generation programme as the largest number of distributorships is among the unemployed graduates and engineers who hold 70 distributorships, while private employers hold less than 25 per cent of them.

Ministerial committees: Three new cabinet committees are at work to tune up administration, improve industrial performance and help meet the power crisis. One committee of the cabinet is at work on reorganisation and changes in the administrative structure to help in more effective and speedy execution of programmes. A second one comprises all the economic ministries in order to review their production programmes and their progress towards the fulfilment of the targets. The third committee is at work on the awesome gap between power generation and power needs and the means of closing the gap. It is hoped that the committees result in improved economic performance which will be seen during this year and the Fifth Plan.

Agricultural production: Under the earlier section, on economic reviews, the performance of the agricultural sector has been reviewed. The Union Government

is planning to build a buffer stock of 12 million tonnes of foodgrains in view of the inadequacy of the current 9 million tonnes stock, the increasing costs of imports and rising grain prices in the international market. This larger buffer target may not be achieved in any one year. For the present it will depend on the kharif procurement and the rabi harvest. Upto the end of February, the kharif procurement has not been very good. Against a target of 34.8 lakh tonnes, only 15.5 lakh tonnes had been procured. The procurement has been about half of the target for Assam (41,000 tonnes against 1 lakh), U.P. (1.56 lakh tonnes of rice against 3 lakh tonnes) and West Bengal (1.14 lakh tonnes against 3 lakh tonnes) and much lower in Andhra (73,000 tonnes against 3.5 lakh tonnes), Madhya Pradesh (1.67 lakh tonnes against 3 lakh tonnes), Orissa (87,000 tonnes against 3 lakh tonnes) and Tamil Nadu (37,000 tonnes against 2.5 lakh tonnes). Haryana with 2.14 lakh tonnes against the target of 3.5 lakh tonnes, Punjab with 6.38 lakh tonnes against 9 lakh tonnes and Bihar with 23,000 tonnes against 30,000 tonnes are doing well. But in all States the quantity procured upto February of this year is much less than that procured upto February 1972—Andhra (73,000 against 1.25 lakh tonnes), Assam (41,000 tonnes against 60,000), Madhya Pradesh (1.67 lakh tonnes against 3.28 lakh tonnes), Orissa (87,000 tonnes against 1.01 lakh tonnes), with even the satisfactorily performing States showing this gap between the 2 years—Haryana (2.14 lakh tonnes against 2.82 lakh tonnes), Punjab (6.38 lakh tonnes against 7.29 lakh tonnes), U.P. (1.56 lakh tonnes against 1.86 lakh tonnes) and West Bengal (1.14 lakh tonnes against 1.83 lakh tonnes). It seems that there will be a shortfall in kharif procurement. Hence considerable hopes are placed on the rabi cultivation and programme which has faced the four fold problems of shortage of fertilisers, scarcity of irrigation waters, scanty rains and power cuts. Here the late January and early February rains in the Northern States have helped so that crop sowings reports from these States indicate that these States will have a larger wheat crop by 20 to 25 lakh tonnes, Punjab going up to 58 lakh tonnes, Haryana to 26 lakh tonnes, Himachal Pradesh with a bumper crop wiping out its deficit of 60,000 tonnes, U.P. producing 80,000 tonnes of wheat and 52,000 tonnes of coarse grains, Bihar 44 lakh tonnes and Madhya Pradesh 111 lakh tonnes. In fact the Government forecast is that the rabi harvest will even make up the kharif shortfall and the total food output for the year may be 104 million tonnes—which is 4 million tonnes more than the NCAER forecast referred to earlier in this issue. This is a little optimistic but is probably a useful damper on speculation.

Against these uncertainties and fluctuations in agricultural production, the Fifth Plan must ensure integrated land use as suggested by the Director-General of ICAR, which involves a relevant combination of agriculture, forestry, fishery and animal husbandry, integrated nutrient supply and pest control as a means of producing more and better food. Such an integrated approach has so far been limited to the planning side. It is now necessary to extend it to the farming side where the farmer needs to be helped to apply all the inputs—fertiliser, pesticide, water and seeds, and use organic and inorganic manures in ways which each soil and local condition calls for. Data now available for the SFDA schemes and MFAL for last year show that 43,000 dug and tube wells, 12,000 pumping sets, 5,000 other minor irrigation units were installed and 26,000 milch cattle purchased and 5,367 poultry units established. The 1971-72 record

cotton production of 65.3 lakh bales has been bringing prices down much to the detriment of cotton growers. Large quantities have also been lying in the open for lack of storage and are in danger of deterioration. The larger textile mills have been able to stockpile cotton to the detriment of small units. Above all as noted under the economic review section, the 1972-73 output is bound to be smaller because of the drought conditions in the cotton producing States of Maharashtra, Gujarat, Madhya Pradesh, Rajasthan, Mysore and Andhra Pradesh. And so the Union Government has directed the Cotton Corporation of India to purchase Rs. 500 crores of cotton both to cushion the 1972-73 shortfall and to ensure a fair price to cotton growers.

Exports and the dollar devaluation: The export trend pointed out in the last issue (page 179) continued to be favourable. For the first nine months of 1972-73 exports increased by 22.4 per cent or Rs. 255 crores compared to April—December 1971. The total export earnings stood at Rs. 1,395 crores for April to December 1972, while imports declined to Rs. 1,231 crores. In this trend there were many elements which require closer examination. Imports declined because of the spurt in import prices which users could not afford. Even so imports of raw materials and components permitted against exports had gone up by Rs. 105 crores compared to Rs. 62 crores for the corresponding period of the previous year. Similarly import licenses for capital goods went up to Rs. 152 crores compared to the previous year's Rs. 139 crores. The boost in exports rests on factors which are not long term, such as the increased hides and skins prices (which netted an additional Rs. 60 crores), Bangla Desh exports, and the devaluation of the rupee reflecting the devaluation of the pound. On the other hand our export base continues to be the traditional exports which with the drought and power cut are bound to decline. There is a slackening in the exports of non-traditional items like engineering goods and chemical compounds. And so there is need for a long term export policy which will take account of all these factors The Union Government is considering an element of compulsion to make the engineering industry increase its exports as it feels the industry has failed to use the various inducements to step up its exports. In fact the Government is planning to extend the compulsory exports obligation scheme to industries in the non-priority sector which have high import content and which produce goods which are not essential to the economy. In fact if the anti-poverty programme is to succeed in the Fifth Plan, the greater part of our essential goods production will have to be exported. A whole host of schemes to boost exports, taking into consideration the present monetary situation in the world needs to be considered. Among important trade agreements in February is the agreement to export 69 items to Greece (including handtools, machinery, jute manufactures, non-electrical appliances, etc.) and 44 items imported from Greece (including gum, resin, lac, etc.) and the MMTC agreement to export 2 million tonnes of iron ore to Rumania as part of the agreement to supply 22 million tonnes in 10 years.

The India-ECM negotiations at mid February have still not made much progress (see Vol. III No. 2 page 101 and No. 3 page 178). They are still at the stage of discussion and disagreement over the terms of reference of the joint India-ECM committee. The only point of agreement seems to be that the committee will incorporate and harmonize where necessary the trade provisions of the bilateral agree-

ments between India and the ECM countries including the quotas on Indian products imposed by one or two countries which must be removed. But the main issue is whether the committee will be authorised to draw up a detailed and comprehensive trade agreement and on this to date, there is no consensus. This slow down in the negotiations is serious because so much is at stake for India in the trade with ECM. The ECM's imports from India in 1971, for instance, was $131 billion compared to the non-ECM countries imports from India which was 78 billions (U. S. $46 billion, USSR $12 billion and Japan $20 billion). The ECM's exports to India in 1971 amounted to $312 billion compared to those from non-ECM countries at $81 billions (U. S. $43 billion, USSR $14 billion, Japan $20 billion). With the old 6 member EEC, India's trade balance is negative ranging from Rs. 71 crores in 1969-70 to Rs. 126 crores in 1971-72. With U.K., it is slightly favourable (except in 1971-72) at Rs. 440 odd crores. Is the future such that in the enlarged EEC, India will lose its small favourable trade balance with U.K.? Even with the U.K. during the sixties India's trade declined because of the rapid rise in U.K.'s trade with EFTA. Is this to continue in the seventies with the U.K.'s entry into ECM? This decline in India's trade with U.K. and ECM is due to the 50 per cent more duty on our imports compared to that on the developed countries', imports. Under U.K.'s protective duties on low cost imports, India's cotton and jute textile exports have been subjected to quota restrictions and import duties in the U.K. Further on U.K.'s entry into ECM, India will lose preference on Rs. 75 crores of exports—tobacco (Rs. 16 crores or 37 per cent of our total tobacco exports), tea (Rs. 50 crores or 32 per cent of our tea exports), leather (Rs. 20 crores or 22 per cent of our total leather exports), cotton textiles (Rs. 18 crores or 17 per cent of cotton textile exports) and jute (Rs. 7 crores or 2.5 per cent of our jute exports)—or 2/5 of our exports to U. K. ECM proposes in return to accomodate Indian interests under GSP which is a means of reducing trade barriers, not of compensating the loss of U.K. perferences, a means of a sharing with all developing countries the crumbs available, and even so excludes some important Indian exports such as tobacco, cashew kernel, walnuts, coffee, prawns, vegetable and fruits from the preference. Even where duty is to be suspended there will be quotas. Take textiles for which India's quota with the U.K. is 11,500 tonnes per annum, while the ECM GSP quota is 5,605 tonnes; duty free jute manufactures to U.K. face a 15 to 23 per cent duty; coir mats a duty of 23 per cent and an additional 23 per cent in ECM countries compared to coir products from Belgium and Netherlands. Indian prawns will have to pay 23.5 per cent duty from which the Danish product is exempted, and ECM is thus a rich man's protected club and India's trade with it will be made to compete against that of other poor countries, particularly the African associate States under the YASUNDE agreement and that of the other rich members of the club. The trade agreement with ECM is of vital importance to the Country. For that to be established, India's political ties must be strengthened with the ECM as pointed out in the last issue and India's own production structure must be based on an efficiency and low cost structure that will make our exports competitive, inviting and attractive.

The effects of the dollar devaluation and the disturbed international monetary situation on the export trade of the Country has still to be evaluated. Jute exports which earned last year Rs. 108.5

crores ($148 million) are seriously affected by the devaluation. Even before devaluation synthetic products were 18 per cent cheaper in the U.S. than Indian jute carpet backing. With the devaluation the margin of price advantage for the synthetic products has further increased and the need for governmental action to make Indian jute exports competitive through reduction or abolition of the export duty is now urgent. The other major export, tea, is not affected to the same extent, as the U.S. is not an important consumer of Indian tea. The Government has decided to maintain the rupee link to the pound at the rate of Rs. 18.9677, after the dollar devaluation. The need for continuing this link to the pound is still under discussion. Since the dollar devaluation, the floating pound has gone up from $2.38 to $2.47 (amounting to a 3.77 per cent appreciation) and the rupee in consequence has appreciated from Rs. 7.9 to Rs. 7.6 to the dollar. Apart from lessening the room for manouver, the link with the pound limits the chance of adjusting our exchange rate in the interest of stimulating our exports. With the other currencies—the German mark, the Japanese Yen and sterling—all having appreciated, there is trading advantage for the Country as far as these markets-which at the moment except for the U. K. are not large-are concerned. While India's debt payments to the U.S. will be lightened by the devaluation, those with Japan, Germany, U.K , etc., will be considerably more burdensome. India's reserves will also be affected by the currency movements. While our dollar reserves which constitute 4.8 per cent of the total will lose, our pound reserves amounting to 25.57 per cent will gain as will the gold and SDR reserves which amount to 51.53 per cent. But in all this analysis of our exchange parity, it is important to note that the real exchange in terms of the purchasing power of the rupee is on the decline. Between December 1967 to December 1972 the purchasing power of the rupee measured by the base 1949 = 100 has fallen by 16 per cent from 46.7 paise in December 1967 to 39.2 paise in December 1972. Another element to be taken into account in the exchange parity picture is the pressure on our exchange reserves this year due to the heavy import bill on foodgrains and heavier debt servicing. The reserves, without gold and SDRs, decreased by Rs. 80 crores between June and December 1972 and stood then at Rs. 400 crores which is the three months equivalent of our annual imports of Rs. 1,800 crores (with gold and SDRs the total reserve stood at Rs. 765 crores). The position would have been worse but for the good performance in exports referred to earlier.

Aid: Aid receipts in the current year have been at the level pledged by the consortium countries. Till January 25, the 1972-73 authorisation amounted to over Rs. 500 crores inclusive of debt relief and the total by the end of the financial year might be Rs. 600 crores. The World Bank group is maintaining its tempo of aid to India. During its fiscal year ending June 1972, its credits to India amounted to Rs. 344.5 crores ($472 millions) and for the next year ending June 1973 will be around Rs. 292 crores ($400 millions). In February, it provided a Rs. 42.34 crores ($58 millions) credit to expand the capacity of the Nangpal unit of the Fertiliser Corporation of India, which when completed in late 1975 at a cost of Rs. 77.38 crores ($106 millions) will produce an additional 1,52,000 tonnes per annum of urea, so badly needed by the Country. The Bank has under consideration the grant of credit for the development of metropolitan cities-water supply, drainage, sewage for Bombay plus bridge construction for Calcutta. Total debt servicing for the Country is rising steadily and from

Rs. 338 crores in 1967-68 to Rs. 479 crores in 1971-72 and Rs. 503 crores for 1972-73. In the first year of the Fifth Plan (1974—75) it will be Rs. 511 crores ($700 million). It is this which makes the long term debt rescheduling and refinancing programme urgent. The relief of Rs. 110 crores for 1972—73 and a similar amount for 1973—74 is the start. The net inflow of aid has thus been steadily declining from Rs. 863 crores in 1967-68 to Rs. 355 crores in 1971-72 and to Rs. 123 crores in official aid and Rs. 329.90 crores in total aid for 1972-73. With the rise in debt servicing, the net flow has fallen more sharply than gross aid. In early February the French Government announced its 1973-74 aid of Rs. 33.55 crores (Rs. 16.35 crores for projects, Rs. 9.24 crores for non-projects and Rs. 7.96 crores for special projects). France is the first member of the Aid India Club which for the second year running has made aid commitments well ahead of the start of the year. The consortium has noted the Fifth Plan assumption that gross aid will amount to Rs. 3,000 crores or Rs. 600 crores per annum, calling for a long term debt relief programme and some precision in project aid when the Plan is firmed up.

International

Bangla Desh : The Bangla Desh Jute delegation to India in early February negotiated the supply to the Indian jute mills of 3 lakh bales of raw jute. It has already supplied 2 lakh bales under the trade agreement. This additional 3 lakh bales will be received by India under approved conditions and prices and will both meet the needs of the mills and help to soften raw jute prices which have been ruling at Rs. 65 a maund. Bangla Desh and India should work out a common export policy in light of the deleterious effects of the dollar devaluation and avoid the real prospects of a minor trade war in this important export field. The time is also ripe for a review of the implementation of the trade agreement between the two countries with a view to extending and modifying it to the mutual benefit of the two countries.

World currencies and the dollar : The lagging pace of world monetary reform referred to in the last two issues of the Bulletin (pages 103 and 181), received a rude awakening with the devaluation of the dollar by 10 per cent announced on February 12, raising the price of gold from $38 an ounce to $42 an ounce. Simultaneously the Yen was floated. This drastic decision was preceded by a week of wild speculation in gold which reached $69.10 an ounce and dollars, of which $6,000 millions came pouring into European and Japanese exchanges and had to be purchased by their central banks in order to support their exchange rates. The dollar devaluation and the floating of the yen has not been the end of the story and a means of return to some kind of exchange stability. Speculative dealings in gold have continued and at February 23 it sold for $96 an ounce in the London market. The panic sale of dollars continued in late February forcing the West German and Japanese Central Banks again to move in to support the dollar. On March 1 the West German Central Bank had to buy more than $2,500 millions to support its floor price. The dollar dropped in all foreign exchange markets when they reopened; London, Zurich, Brussels (which had to buy $40 million in the first hour), Milan and Tokyo. In London it dropped to $2.4940, Milan to 559.5 lira. The yen has been in effect revalued by around 18 per cent and all Western European Currencies except West Germany are operating a floating or two tier system. The Soviet Union cut the rouble value of the dollar by 9.4

per cent and China reduced its dollar exchange value by 10 per cent, Israel, and Indonesia, have devalued their currencies by 10 per cent, and Britain, Canada, Italy, Japan and Switzerland have allowed their currencies to float, adding to the confusion. The reasons for this fresh crisis have been outlined in the earlier issue of the Bulletin. One immediate factor is the enormous flood of dollars in Europe which had been created in the sixties, when it was a reserve currency and the additional dollars created by the multinational corporations who have kept their profits in Europe because of the U.S. regulations against investing abroad. A second immediate factor was the protective walls of controls built by the governments against the surplus dollars which kept rushing from one centre to another. It was comic that the Italian control against the dollar inflow, which led to dollars rushing to Switzerland and when banned there, rushing to Germany and Japan, which touched off the crisis. A third short term factor has been the unreality of the December 1971 Smithsonian agreement in terms of the extent of the dollar devaluation, the extent of the revaluation of the Japanese yen and German mark, as was the low official price of gold which was a fertile source of speculative activity. A fourth factor has been the very heavy foreign spending of the United States on military interventions in Vietnam, Laos and Cambodia, its military installations abroad including troops in Germany, against which from 1971 it has had a series of trade deficits—the first to appear in the sixties. Its price and cost structure have made its goods non-competitive and it has not been able to overcome the trade barriers erected against its products in the ECM countries and particularly in Japan. In 1972 despite the 1971 dollar devaluation, Japan had a $4 billion trade surplus with the US, which is two thirds of the U.S. trade deficit. Thus there are two broad factors in the picture; first the monetary factors—the flood tide of U.S. dollars outside the U.S. the unrealistic exchange rates and the controls over the exchange market, the problem of the gold price—on the one hand, and second the real factors of trade, trade controls and tariffs and the cost, price and productivity structure of the economy of each of the countries on the other. On both accounts the international monetary system has broken down, the attack against it is continuing in the exchange markets one month after the second devaluation and the outlines of the monetary reform set forth in Vol. II No. 11 pages 17-19 of the Bulletin are now the only way out. That is the task of the group of twenty when it meets at the end of March —to solve the problem of the refugee dollar, to ensure a firm basis for international liquidity, to transfer the reliance on gold and the reserve currencies to SDR, to free international trade and provide for equal rights and responsibility in international liquidity for all countries. All these principles have once more been infringed in the latest crisis action as far as the developing countries are concerned. Not one of them was consulted about the problems and the immediate way out and even the differences between the rich nations, Japan vrs U.S., Germany vrs France, U.K. vrs the other ECM members, are so managed that it is presented as a matter of confused and confusing exchange rates arithmetic, while ensuring all advantages in international trade to themselves. In this sense there has to be a complete turn around in the spirit and manner of the international monetary reform consultations. India has to do a lot of homework to participate effectively and intelligently in such discussion. Its position of principle set forth in Vol. III page 103 is sound. It must be translated into practical and realistic terms and it must be made saleable to the rich nations. The decision

to continue the link of the rupee to the pound needs to be further worked on as pointed out earlier. The first dollar devaluation and the floating pound gave the rupee a 5 per cent devaluation without our willing it. Now the second devaluation of the dollar and the strengthening of the pound involves the rupee in a 3 per cent appreciation, again without our willing it. This makes our 2 million tonnes food imports and U.S. imports generally cheaper and so may reduce our current deficit with the U.S. which for 1971–72 amounted to Rs. 262.72 crores in exports and Rs. 416.52 crores in imports. It is true that in the first nine months of 1972–73 our exports to the U.S. were Rs. 245.35 crores and our imports Rs. 201.55 crores and our exports to ECM and Japan will be cheaper. On the other hand China is emerging as a serious competitor for the U.S. market — something that we have not had to reckon with since our independence. China is well ahead of India in the U.S. market in bristles ($ 4.6 millions vrs $ .04 million), cassia ($ 1.3 millions vrs $ .005 million) and antiques ($2 millions vrs $.011 million). The same is true of our engineering exports. But these are short term issues and advantages to which must be added the long term factors of a growing level of trade based on a competitive and productive economy.

World Natural resources: The 44 States U.N. Committee on Natural Resources meeting in Delhi in February came to a somewhat different conclusion from that of the Club of Rome Scientists (see Vol. II No. 5 page 11) with regard to the exhaustion of the world's natural resources. The bulk of the mineral and energy resources of the world is in the developing countries and only 10 per cent of these has so far been explored. The U. N. Secretary General's report calls attention to several hundred million tonnes of copper, nickel and manganese ore in the Pacific ocean, constituting far more than the known terrestrial reserves. Only a fraction of 1 per cent of the earth's crust has been explored so far. Against the 35 billion tonnes demand between now and 2000 A.D., there are at present 750 billion tonnes of known resources available. The developing countries consume only 10 per cent of the world's steel output. The reconciliation between the Club of Rome Scientists' view and that of the U. N. lies in the rate of minerals and energy consumption of existing sources by the developed countries. The U.S., for instance, which now imports 25 per cent of its oil, will by 1985 import 35 per cent. A second conclusion of the committee was that new energy sources and processes should be evolved both to ease demand for non-renewable energy and ease pollution. The new energy sources are tidal power, geopressure energy, thermal energy of the sea, solar energy and the new conversion processes are combined hydro and thermal power generation, combined production of heat and power, multi output process for geothermal resources, fuel cells, electric storage batteries and use of hydrogen–which can improve the rural energy economy. A third recommendation is the speeding up of the development of ground water resources, and a lowering of drilling costs. In Europe which has only 7 per cent of the world's total water supply, the problem of pollution is grave and must be combated. Fourth the U.N. agencies should undertake medium and long term projections on the supply and demand for energy, mineral and water resources on a global, regional and national basis and should issue 2 years reports. In surveying, the techniques of both multimineral and mono-mineral surveys should be used. Finally the committee once more recommended the creation of a U.N. Fund for exploration of natural resources and requested ECOSOC and the General Assembly to set up the

Fund of around $10 million. This last recommendation is a non-starter. The developed countries who have to make the contributions are against it for various reasons, including the question of the sovereignty over the resources developed by the Fund and the developing countries with such resources are also opposed to it because it will affect their privileged position. Looking at the Committee's work, achievements and limits, it can be seen that the value of the work of the committee is in its technical discussion, consensus on certain issues and information gathering which the U.N. agencies can perform in a coordinated manner for the committee and the member States of the U.N.

World food and living standards: Since the start of the Second Develop ment Decade there has been no improvement in the very slow standard of life of the poverty sector forming 101 million people in the developing world, reports the U.N. study for the Commission on Human Rights. Since 1970 the average growth rate of 4.1 per cent has been offset by population increases and inflation. The result is that the gap between the rich and poor within each country and between the rich and poor countries has widened. Within this sombre picture, FAO reports that several million people living in the countries situated between Dakar in the West and Dacca in the East might die of hunger this year because of the sharp reduction in food production and rising prices. The total export wheat stocks are likely to fall below 30 million tonnes which is the lowest in 2 decades and rice exports from Thailand will be cut by one third and coarse grains production in 1972 has declined by 20 million tonnes. U.S. and Europe have a reduced winter wheat production. As for the price rise, a tragic illustration is India's 2 million tonnes of food purchase which will cost us the same as 4 million tonnes if purchased last year. The need for reduced consumption by the richer groups is imperative.

Asian Development Bank: The Asian Development Bank with a capital of $2,075 million, 20 per cent of which is paid up, has so far disbursed $250 millions in special Fund loans at interest rates of 1.5 to 3 per cent with repayment periods ranging from 16 to 40 years. It is planning to increase its Special Fund loans to $300 millions by 1975. One problem which member States in Asia face is the 10 per cent increase in repayment obligations in the ADB loans they have contracted, consequent on the dollar devaluation on which relief is needed. This small but effective banking institution plays a useful role in the development of the South-East and small Asian countries. India is a donor in the Bank structure and should deploy more of its financial and professional resources for its effective functioning.

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II. Agricultural Development

Paddy production and levy

Production of paddy in the State is in satisfactory condition as noted in the last issue page 183. The Government has agreed to contribute 1,00,000 tonnes of rice to Central pool, mainly to help Kerala. The FCI has been asked by the State Government to collect the 20 per cent levy paddy in Thanjavur and Chidambaram district in South Arcot district. The network of 40

purchasing centres in Thanjavur district will be by FCI and the Civil Supplies Corporation to collect 85,000 tonnes of paddy. 25,000 tonnes will be used in the FCI rice mills at Sembanarkoil, Mannargudi, Thanjavur and Chidambaram till next October when Kuruvai will come on to the market. One of the problems is for the farmer to get used to bringing his crop to the market. He has been used to the agents of wholesalers and millers coming to the village and buying the paddy off the threshing floor. Now he produces more plentifully than before the IADP days. The HYV adopted in Tiruchi and Thanjavur are few and well established. For the Kuruvai season it is Karuna which has replaced ADT 27 and in its turn is slowly being replaced by Karikalan which is an even heavier yielder than Karuna. For Thaladi the long duration CO-25 has been replaced by Ponni with a finer grain and 135 days duration, the remaining days being used for a quick green gram, Anjugam, which is also a soil nutrient. Anjugam has become popular as a rainfed crop for multiple cropping. Another new paddy variety developed at the Tiruppam Research Station in Chingleput is a selection from Kullakar termed TKM 7, which has a duration of 108 days, with longer and bolder grain than Kullakar. It can be grown in all seasons and in all types of soil. It is drought resistant and also resistant to paddy pests and disease and is being grown widely in Chingleput and North Arcot districts. And so now the farmers' needs are warehousing, drying plants, rice mills and markets. It is an opportunity for cooperatives working closely with agro-service centres and industries to push forward and supplement this production change. In this task even the FCI and the State CSC can perform such services and go to the farmers' threshing field to buy his paddy.

Fruit farming, spices and sugarcane:

The growing of fruits—banana, papaya—and sugarcane in the Coimbatore district, oranges, mandarin, sapota in Salem and Shervaroy hills and cloves, cinnamon, nutmeg, cardamom, pepper and cocoa in these areas and Courtallum is spreading. In the plains the problem faced by the farmer at present is that in spite of a plentiful supply of water due to the December floods, the power cut poses problems of getting at the water for watering the fields. The next two months will see a worsening of the power supply to the farmers and those are the months when water must be made available plentifully, to the fruit, sugar and spice farms. There are two solutions that are being tried. The luckier farmers such as the cane growers of Sakthi Sugars at Appakudal have access to the 2,000 diesel engines which have been acquired by the firm and loaned to the farmers for pumping water. There is a scramble for the purchase by the farmers of oil engines in Coimbatore and Salem. The other resort is to the traditional use of bullocks and the kavalai which are also being spread fast, though it is a little more time consuming. The spices and fruits being grown in the Shervaroy hill areas are a means of diversifying the heavy dependence of the growers there on coffee which is facing serious damage from the green bug. Among the fruits, this State has developed banana farming most highly because of the work at the Central Banana Research Station, Aduthurai. 25 per cent of the Country's banana farming is in this State. The Aduthurai centre has rationalised into 80 clones our bewildering varieties (230) of bananas, has developed all our export crops and has introduced some very successful exotic varieties in a successful programme of hybridisation. The Fifth Plan should see a further growth of this fruit-cum-vegetable crop in this State. The

Sugarcane Research Station at Cuddalore has developed a medium duration sucrose rich sugarcane, CO 6304, and has released it for growing all over the State in all types of soil by the State Agricultural Council. It can be planted between February and April and yields heavily in both quantity and quality. It should meet our growing sugar needs in the Fifth Plan.

Pulses and vegetables

The 1,264 acres Anna Pannai at Kudumiamalai is demonstrating quick maturing varieties of pulses and vegetables which can be used by the farmers for multiple cropping both in irrigated and dry land farming. Among pulses four varieties have been developed for growing in wet lands and under hot and dry conditions. These varieties are Prabhat which is a 95 days yielder of 700 kg. per acre, F9 blackgram which is a 60 days yielder of 400 kg. per acre, J9-63 Bengalgram which is a 90 days yielder and Alangudi redgram which yields in 90 days. For multiple cropping groundnut sown in July and harvested in November can be followed by TMV-3 gingelly in November, as also Tapioca and T9 blackgram, SA-1 redgram and Anjugam green gram, with cumbu in its many varieties. On Vegetables, the farm has demonstrated for garden land farmers relay cropping of tomato C-1, chillies K-1, bandai, brinjal, cluster beans, cabbage, beetroot, cauliflower, carrot and capsicum. The farm is a good demonsration for the farmers as it earned a profit of Rs. 68,000 for 1971-72.

Research in cholam and soils

Cholam which is a dry drop usually feeds on organic manure. But the HYV cholam like CSH 1 is being made to yield more through application of nitrogen as foliar spray in a second turn. For the first application there is moisture in the young plant to absorb the nutrient, while the second foliar application gives higher yields. This may also involve some change in the time of sowing cholam which should be immediately after the rains or even before the rains. This programme will need to be supported fully by the seed and the fertiliser. In order to increase the output of pulses and oil seeds in the State, the Tamil Nadu Agricultural University has developed a mass multiplication programme of soil bacteria. Under their programme, the farmers' needs in the State for pre-treating these crops will be fully met through the 300 litre fermenter which will make available the culture at a cost of Rs. 2 per acre. Other research following this culture, include the development of algae, microbial fermentation and degradation of newer pesticides. The results of the research will not only be enriching the output-in quality and quantity-but also introducing an element of stability in production.

Research in cotton :

Further to the analysis of cotton production in Vol. III page 109, it is now possible to make a first assessment of the intensive cotton development programme. The 1971-72 output was a record, yielding 65.3 million lakh bales grown over 77.8 lakh hectares. For 1972-73 the estimate is lower at 60 lakh bales, which is good in view of the drought hit producing areas. The good cotton performance is due to good weather conditions in 1971-72, and good prices but basically because of the research results which have produced a new technology in which the farmers have invested readily and heavily. The research in 11 main centres and 30 testing centres has produced varieties suitable for different soils and different ecological conditions. Among the elite varieties developed are MCU-5, Hybrid-4 and MCU-7 which have yielded 25—30 quintals per acre with considerable improvement of quality.

MUC-5 is suited to irrigated areas while MUC-7 can be grown anywhere. Sujata and Subin also emanating from the Coimbatore station have helped in producing cotton equal in quality to the best Egyptian cotton. Next to the food-grain research programme, the cotton programme has had the highest pay offs.

Coffee :

Further to the coffee crop estimates for 1972-73 given in Vol. III pages 109 and 185 the latest computation is that it will be 90,000 tonnes and that for 1973-74 will pass the 1.1 lakh tonnes mark of 1970-71. This means that for the five year period 1970-75 the annual average coffee production is 90,000 tonnes against the 75,000 tonnes for the previous 5 years. With this increase in production, the industry faces two problems. Internal demand which was 40,000 tonnes has fallen to 37,000 tonnes due to the lifting of prohibition, the increasing competition from soft drinks and the mixing of chicory with coffee. On the other hand we are losing out in our export trade. India's export forms around only 1 per cent of the total world export of coffee but even so for this year after exporting the first quarter's quota of 6,649 tonnes, and on applying for its quota of 11,000 for the second quarter the country is told that the larger producing countries, Brazil, Colombia, Angola-the so called Geneva group-have used up all the quota that was available for the second quarter. The stakes and problems of the coffee industry are important. It employs over 5 lakh persons in the Southern States, increasing its acreage from 2.15 lakh acres to 3.23 lakh acres as between 1947-48 to 1967-70, increasing its production from 16,000 tonnes to 1 lakh tonnes and its yield from 191 lbs to 433 lbs per acre during that period. The annual export of coffee increased from 3,170 tonnes to 32,190 tonnes and export earnings from Rs. 7.78 crores to Rs. 25.1 crores during that period. The problem faced by the industry are low internal consumption, low wages (Rs. 2 per worker), productivity rising faster than wages as between 1947-67 (productivity increased by 184.8 per cent compared to wage increase of 116 per cent in Mysore, 114 per cent in Tamil Nadu and 238.4 per cent in Coorg: real wages hardly rose in Mysore, rose by 15.2 per cent in Tamil Nadu, by 72 per cent in Coorg), high cost and high prices, inefficient management and outdated cultural practices, and difficulties in exports. The industry is labour intensive, with labour cost forming 34 per cent of total costs. But in view of the unfortunate fact that labour productivity rose much faster than money or real wages, the problem of high costs and high prices must be found not in the labour cost factor but in the inefficiency of the small estates. Of the total of 46,402 estates, those below 5 acres form 67.7 per cent which is on the increase due to partition of holdings, sale and land policy. Small coffee estates are the rule everywhere — in Brazil and Colombia also. But in the South, smallness and inefficiency seem to go together. Thus the production costs of big estates increased from Rs. 127.15 per 50 kgs. in 1958-59 to 157.44 in 1968-69 while that for small estates increased from Rs. 130.33 to Rs. 162.70. And prices have risen from Rs. 215.24 per 50 kg. to Rs. 315.30 during this period. The export problems faced by our coffee growers include their smallness, high freight rates, the 9.6 per cent ad valorem duty in quota countries, the small export quota, the fair price in the quota countries and the low prices of the non-quota countries. Under these conditions, the way for the future, is, as indicated in earlier issues, an export drive supported by government help in negotiating our quota, more consumption within the Country, improved shipping services, development

of cooperatives which will pool the efforts of small estates and modernisation of management.

Tea

The tea industry in the State faces short term and long term problems. One current problem is the effect of the power cut in the State on the industry. The private and cooperative factories which had been exempted from the cut till December 1972, now have the cut so that they work for only 15 days in the month. The result is that the demand for green tea leaf has declined sharply and the price has slumped from Re. 1 per kilo to 50 paise. To meet this situation, 8 generators with a capacity of 55 KVA are being installed in the cooperative factories at a cost of Rs. 70,000. The fall in prices and slow movement of stocks has also resulted in 6.6 lakh kgs of tea valued at Rs. 30 lakhs lying in the factories in the Nilgiris unsold. The long term problem is as analysed in the last two issues (pages 110 and 185), the growing imbalance between world supply and demand for tea. Against the first 11 months of 1972 world production figure referred to in the last issue (765.6 million kg), now estimated for 12 months at 793.2 million kg, India registered the largest increase in tea production for 1972 at 451.9 million kg, which is 20 million kg more than the previous year's. Even the production in this State and the South in which a decline was forecast (see Vol. III pages 110 and 186) saw 1972 ending with a small rise of 0.2 million kgs at 103 million kg. The exports from the South was 39.8 million kg for 11 months (which was again higher than that of last year) out of an all India export of 190 million kg. The London auction prices have been falling and South India tea did not share in the later recovery of prices in January. There is here a long term problem—of a steadily increasing production confronting severe competition from rival beverages in the main consuming countries. While this is not as serious a problem for our domestic market, this threat can be seen in the demand trends abroad. The largest consumer of South Indian tea is the Soviet Union (10.8 million kg), followed by Sudan (6.8 million kg), U.S. (4 million kg), Tunisia (2.2 million kg), Kuwait (1.3 million kg), while our traditional U.K. market dropped sharply from 4.6 million kg to 3.8 million kg. Under these conditions, South Indian and India tea growers must adapt themselves to the new demand trends. Instant tea is now in demand in the U.S. and ECM and this is a product which the South must produce or lose its export markets. The other moral is that India should spend a part of its export earnings to promote tea consumption in these countries. This promotional campaign has a high pay off as past experience and Sri Lanka's current efforts show and must be geared both to projecting the national product, India tea, and tea generally from any part of the world.

Fish and Dairy Farming :

Five fisheries development programmes are under way in the State. The first is the induced pearl fishing project in Tuticorin where historically world renowned pearls were developed with 20 million oysters found in 1961 at Poonthottam near Tiruchendur and Thollayiram near Tuticorin. Now for 10 years there has been no oyster fishing and the project is to increase the oyster population so that there can be annual pearl fishing. For this a small farm at Veppalodai is being used for the development of mother oysters. A second project is the development of landing berthing facilities at a cost of Rs. 1.5 crores with the help of the Union Government at Chinnamuttam

in Kanyakumari district and Kodaikkarai and Mallipatnam in Thanjavur district. In addition a harbour investigation team is investigating similar facilities along our coastline at Pulicat, Mahabalipuram, Adhirampatnam, Tirumalaivasal, Punnakayam, and Kolachal. Third at various centres joint fisheries projects are to be established under which 20 per cent of the project cost will be in the form of an interest free Government loan, 20 per cent from private partners and 60 per cent from the nationalised banks. Already 50 applications from Madras, Cuddalore, Mandapam and Tuticorin have been received for this project requiring the purchase of fibre glass and ferro cement vessels and nylon nets for offshore fishing. Fourth with the help of ARC, fishermen's cooperatives at Thanjavur, Ramanathapuram, Cuddalore, South Arcot and Kanyakumari districts will at a cost of Rs. 60 lakhs each place orders or produce mechanised vessels for distribution to its member fishermen for inshore fishing. The cooperative will also set up cold storage plants, acquire insulated vessels and market the catches. Fifth the Union and Norwegian Governments Rs. 4 crores project for equipment and expertise for 12 offshore fishing stations include ones at Tuticorin and Madras. On the basis of existing projects, the Country's fish production which has increased from 0.96 million tonnes in 1961, reached 1.845 million tonnes in 1971 and will reach 2.25 million tonnes by the end of this year. So too export earnings which increased from Rs. 4.6 crores to Rs. 45.45 crores will go up to Rs. 60 crores by the end of the Fourth Plan. The new programmes will see a considerable expansion of this important area·

Dairy farming in the State is now in the hands of the Rs. 5 crores Dairy Development Corporation set up by the State Government whose planning was referred to in Vol. II No. 9 page 21 and No. 8 page 20. Its activities include (a) expansion of the Madhavaram Dairy to handle up to 1.25 lakh litres a day as against the present 85,0(0 litres; (b) establishing the second dairy at the Ambattur industrial estate with a total capacity of 2 lakh litres a day; (c) establishment of centres in the milk shed area of the Corporation to collect milk, process and transport it to Madras; (d) creating 1 or 2 feeder dairies in the milk shed area to handle approximately 2 lakh litres a day for use in Madras; (e) setting up and operating the skimmed milk powder plant in Madurai with a capacity of 1 lakh litres a day (see Vol. II No. 10 page 20); (f) providing farmers with fodder, improved milch cattle and other technical inputs to increase and improve their milk supply to the Corporation. The Corporation in the State ought to help in the attainment of the Fifth Plan State targets set forth in Vol II No. 12 page 2.

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III. Industrial Development

Salem Steel :

Work is going ahead with building, clearing and construction on the Salem Steel Plantsite. The Union Government has once [more confirmed that its first stage will be completed in 1976, the second stage 18 months later and the final stage 18 months after that. The plant will be fully commissioned in 1979. The recent controversy over the product mix of the Durgapur plant has not led to any change in the prior decisions concerning Salem.

Hindustan Films.

Hindustan Photo Films on the basis of its current good performance is to be expanded within the Fifth Plan investment of Rs. 30 crores in the photo film industry so that the Hindustan unit will be the largest photographic film industry in the Country, producing 5 million sq.metres of X-ray film annually and manufacturing colour films with an 80 per cent indigenous content. On X-rays production it is 95 per cent. The unit whose accumulated losses amount to Rs. 14 crores has now turned the corner. It is using 75 per cent of its capacity. X-ray film production has gone up from 24,115 sq.metres per month in July 1972 to 91,543 sq metres in January and to 1,50,000 sq.metres in February. So too, is it fast increasing production in the other products-cine positive and bromide paper. It will be recalled that a foreign firm offered to reorganise this sick unit for an enormous fee of Rs. 10 crores, while local engineers did the restructuration for Rs. 45 lakhs. The good performance of the unit is due to professionalising the board which now includes experts in quality control, marketing, finance, R & D and management, and to sound policies and a long term plan. There is here a lesson for all our public sector undertakings and that is to place them under professional management personnel and to cut back on surplus civil service types of personnel with which the units are usually cluttered.

Madras Refineries:

After the annual January shut down for over hauling, Madras Refineries has started production again well beyond its 2.5 million tonnes per annum capacity. The limit will be 3 million tonnes at which it is proposed to standardise all refinery units in the Country. The demand for petroleum products is increasing at an annual 9 per cent. In this context the capacity production of this unit, the expansion of Koyali to produce an additional 3 million tonnes and the Cochin refineries starting production in July will be of help.

Hindustan Motors

Hindustan Motors' plant at Tiruvellore inaugurated in February will manufacture earth moving equipment such as rear dump trucks, front end loaders, crawler tractors and scrapers. The plant has a capital outlay of Rs. 15 crores and will be feeder to both ancillary and small scale industries in the State and Country. It will provide employment to 12,000 workers and as the greater part of the machinery for the plant has been manufactured in the Country, is also a foreign exchange saver.

Mineral exploration

With the help of the United Nations, the mineral exploration programme around Tiruvannamalai is entering its second phase. In the first phase about 150 million tonnes of low grade iron ore were discovered in Tiruvannamalai. Preliminary laboratory tests show that the ore can be beneficated to economic grade. After meeting the Salem Steel plant demand for which the ore supplies from the Southern part of the State are also available, the Tiruvannamalai ores will be exported to Japan via the Cuddalore and Madras ports. In the second phase detailed prospecting is to be carried out over a 3,500 square km. area between Salem and Coimbatore. On the basis of this operation and the feasibility studies on their commercial exploitation, substantial investments for mining the ores will be called for. The mining operations will open up the demand for skilled and semi-skilled labour in the State. It has also endowed the State with an excellent geological laboratory, perhaps the best of its kind in the Country.

Leather

The leather industry in the State continues to face a series of problems. The power cut has affected the working of mechanised tanneries in North Arcot which also have large export commitments. Early in February they suffered a 3 day power blackout leading to some loss of skins under process and the subsequent six hour a day supply is inadequate for their production, particularly for exports and as in other industries there will be cut backs in production, retrenchment of labour and loss to the tanneries. Also in February STC circulated to the trade various rules on export which the trade objected to and was still awaiting impatiently the interim arrangements outside of STC for handling post canalisation contracts. Meanwhile the Union Government's decision to create a Corporation under the Indian Companies Act to deal with the development of the industry and its exports has not been accepted by the trade which understood that the Union Government intended to set up an autonomous agency under the act of Lok Sabha on which all trade interests and the ministries of Trade, Industrial Development, Planning Labour and Finance would be represented (see Vol. III page 189). Whether the proposed Corporation can carry out the purposes of creating the Rs. 60 crores infrastructure for the industry's exports, and assist in the transfer of technology is doubtful. The Leather Development and Export Authority which had been proposed would have had the experience, technology and expertise to develop the industry and would have been able to ensure that the primary producer gets an adequate return on his product as well as that of our exports abroad. It is also necessary that small tanners be given an export quota so that they can export directly and compete on equal terms with the export firms. The State Government is also taking up the problems of the leather industry with the Union authorities. In the meanwhile the Union Government in addition to banning the export of raw hides has established a ceiling for this year of the export of semi-finished hides at the 1971-72 level. It is the first step to banning this export also. In addition a cess on exports is levied, the proceeds from which are to be used for developing the footwear industry, particularly in relation to its commitment to build the infrastructure for converting the semi-manufactured hides into finished export goods. These directives should relieve the leather shortage faced by the shoe industry and bring down prices which had gone up by 30 per cent. But the Union Government should work closely with the trade, obtain its experienced support and cooperation and ensure that the export markets are conserved and developed.

Handloom :

There is a crisis situation in the handloom export industry because even at the prevailing high prices, yarn is not available. The exporters have Rs. 15 crores worth of confirmed export contracts up to October 31, 1973 and unless yarn is made available to the handloom weavers the export trade will come to a standstill. The yarn requirements of weavers in the State amount to 22,500 bales every month and when all the yarn from the cooperative and Government managed spinning mills is made available to the handloom weavers only a little more than one third of their needs are met. The cooperative mills produce 4,500 bales everymonth and the government operated mills a further 3500 bales. The State Government has also asked the Southern India Mill Owners Association to place at its disposal 3,000 bales of yarn at reasonable prices to meet the needs of weavers in Salem and

Madurai. The chairman of the Association has requested all member mills to make available this amount at the December 1972 prices. In addition the Union Government should restrict and (except for Bangla Desh) ban the export of yarn and subsidise the State Government at least partially in procuring the yarn produced by private sector mills for distribution to the handloom weavers. There is here a need for rationalisation—with the glut of handloom goods in the domestic market and the scarcity of yarn for exports. A system of rationing in the distribution and use of yarn may have to be introduced.

Khadi and village industries :

The late January-February exhibition of the products of the Tamil Nadu Khadi and Village Industries Board at Rajaji Hall provided an expanding market and a badly needed sales promotion for its products. Khadi is not only an employment generator in the rural areas, it has gone through several phases of innovation and improvement to meet the changing needs of the consumers. The 2 spindle charkha, the ambar charkha and more recently the 12 spindle charkha developed at Coimbatore help in producing many fine and varied varieties of khadi and muslin khadi. Charkhas are being used also to produce yarn for weaving muslin khadi. The 48 spindle charkha, using power for carding, is producing khadi at prices which are in the range of the rural areas and it is hoped to expand the production of this variety called Makkal Thuni. Three more rural fabric centres at Edayaval (Madurai district), Myladi (Kanyakumari district) and Valliyur (Tirunelveli district) will add to the existing 2 centres in Coimbatore in running power operated mini mills to produce coarse variety cloth. 1,563 industrial cooperatives have been set up in Kanyakumari, Coimbatore, Thanjavur, Tirunelveli, Ramanathapuram and Chingleput to tap neera from the 40 million palmyra trees in the State, convert it into jaggery, extract fibre and make mats and packing materials. The fibres are also being exported. Handmade paper made from waste cloth is another growing industry, also popular with tourists. Another activity is the use of the dung from the 1.5 crores cattle in the State from which compost manure, cooking gas and even lighting is produced. Village oils from the traditional and improved chekkus are used as non-edible oils to make the gopuram mark soap. Similarly honey, leather, pottery are developed through a network of pottery associations. The Board heads up our important employment and consumer goods production programme which should receive a further stimulus in the anti-poverty strategy of the Fifth Plan.

Sugar

Sugar production in the State is doing well and has not been affected by the power cut as the mills generate their own power. The cane growers as we have seen earlier are being lent generators or funds to purchase generators for irrigating their cane crop. Sugar production for 1972-73 is estimated at 35 lakh tonnes and the target for the current year is 40 lakh tonnes. In addition to the three mills already licensed, six more mills will be set up in the State during the Fifth Plan to help to achieve the ambitious Fifth Plan target of 58 lakh tonnes. The crushing season in the State is being extended to 180 days which might result in some decrease in the average recovery. What is now needed is a long term integrated sugar policy under which the effective sugar producers in the State can make an effective contribution.

Private sector reports

The Annual report of Ashok Leyland records a relatively poor year with reduced operations, sales, profits and dividends. This poor performance has been due to disturbed industrial relations both in the firm and in the ancillary units, to rising raw material prices and increased taxes following the Pakistan war. The result is that a small amount (Rs. 22,184) has been transferred to the General Reserve compared to Rs. 2.44 lakhs during the previous year. The firm is going ahead with its expansion programme and it is hoped that the current year will see the firm reaching its production and export targets. Kothari Madras' annual report — the first after the takeover of the five companies, Blue Mountain, Waterfall, Balmodies, Kothari Textiles and Adoni, shows a good start in bringing together the various operations run by the five former companies in tea, coffee, fertilisers, textiles and yarn sectors. The level of production was not high. The tea crop was affected by the drought and falling prices, a poor first half of the year in textiles when cotton prices ruled high and the effect of the power cut on both textiles and plantations. The gross profits for 1972-73 are however, computed at Re. 1 crore. The textile section is going in for a programme of continuous renovation. The export sales were Rs. 41.88 lakhs which is a near five fold increase over the previous year. The plantation division faced for the first time serious labour unrest. It is also going in for a programme of replanting and fresh tea planting which has increased tea production by 75 per cent. The fertiliser division worked to capacity and and achieved a good sales record to Rs. 4.63 crores. In the present situation of the shortfall in fertilisers, this is an important contribution. For the future the company is expanding into manufacturing of wrist watches, automotive batteries, caustic soda, P.V.C. products and electrolytic capacitors. This diversified production will increase both production and profitability several fold.

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IV. Education, Science and Health

Unrest in educational institutions

February witnessed teachers, strikes in 4 States, the Haryana teachers, strike being the most extensive and the subject of discussion in Lok Sabha. The teachers' strike in Jaipur turned violent and led to lathi charges and firing of tear gas by the police. The Kerala and Andhra teachers' strikes were linked with the political agitations headed by the political parties while the movement in the other two States were based on demands for increase in the salary and improvement in the conditions of service of teachers. Student unrest during the month was concentrated in this State—the strike by Pharmacy students and dental students on employment grounds, by polytechnic students for equating their status with those engineers including burning of buses in Coimbatore, by Law College students over whom should be invited as the chief guest for the hostel day and a busmen-student clash in Kumbakonam. Students, strikes in Andhra and Kerala also are recorded for political reasons. Violence flared in the Assam Medical College disturbance. The most serious incident was at Hazaribagh where students set ablaze the college offices including the

Principal's and ransacked the science laboratories. Once more non-academic causes predominate in this situation of continuing unrest in our educational institutions. In this context, the call of the President of the Republic at the Bangalore University and the Mysore Governor at the SIET Women's College day in Madras is timely in regard to one of the factors. They called for an unanimous agreement among political parties in the Country that they would not use students as raw material to promote their personal ends. What is even worse, because it constitutes a betrayal of trust, is the trend of teachers to use students as a means of obtaining redress of their grievance and this too, they suggested, must stop. Education is one area where advance action on the needed reform and restructuration can take place without letting unrest and violence run its course. There is now only a few months or year for this potential to be realised in the State and the Country.

Educational reform :

The greater part of the reform proposals in February centre around the examination system The annual convention of Madras city headmasters emphasising the need for each headmaster being given freedom to experiment and work out curricula to suit the local situation recommended that for the SSLC examination the State should be divided into smaller units each with an autonomous body for conducting the examination. In addition to the external examination, internal assessment of student performance throughout the year should be entered in the school certificate. The pattern of question papers should be changed and objective and problem based questions should be introduced, they recommend. Again among the 10 NCERT projects for the State (a somewhat low figure among the total of 297 among the 15 States), examination and evaluation along with curriculum and teaching practice figure prominently. The Union Minister of Education also on the occasion of the convocation of the Vikram University, Ujjain, called for the aboliton of annual examinations up to class 10 and the promotion of students to upper classes on the basis of their performance, in accordance with the recommendations of the Central Advisory Board of Education. This will involve doing away with the requirement of middle school certificates for certain lower category jobs. The February seminar of the Association of University teachers of the State called attention to the need to restructure the university examination question paper by introducing short objective type and problem solving questions alongside of the conventional essay type questions. A question bank should be developed. It also recommended that internal evaluation and grades awarded separately for it be developed along with results of the external examinations, which should be retained as it trained the student to face dangers, strengthened his moral and intellectual qualities, and ensured uniformity in assessment which is indispensable under the present affiliating university system. On the other hand it recognised the defects of the present examination system—as an encouragement to selective and not continuous study, as a test of memory and not ability of analysis and originality; as a low indicator of intelligence generally. The system of internal assessment is open to the abuse of favouritism and victimisation and inter-collegiate rivalry. Hence as a compromise solution it recommended that the internal assessment grades should not be aggregated with that of the external examination but shown side by side, on the basis of which the prospective employer can make his judgement. It also suggested that the

semester system and frequent examination would encourage the students to work hard throughout the year. Thus on the examination system there is a wide measure of agreement on the problem and the reform. What is now needed is to put this agreed set of conclusions into action in the State and the school at the school and university level. University reform proposals were also debated and some decisions made at the February meeting of the inter University Board, now called the Association of Indian Universities. Its response to the Union Planning Commission's query as to whether university fees should be raised is not convincing. The Planning Commission put the question in the most complex way. It stated that the question must be studied on the basis of a (a) the pattern of expenditure on higher education by the Union and State Governments, (b) the pattern of expenditure at the State level in relation to the State and private education sectors, (c) the grants to universities and colleges and (d) the State policies for helping under privileged sections. All this is quite unnecessary. The price of education needs to move in some relation to the price of rice, housing and above all refrigerators, cars and other luxury articles, as 80 per cent of the university students are from the upper and middle classes. And the Association's response that if university fees are raised, the poor sections will be barred is a piece of sophistry. First the existing system keeps them out and it is not fees that help them. Second, fees should be doubled for 80 per cent of the rich and middle class students and exemption from fees and fellowships provided for poor class students. The real reason is that political power today is in the hands of the upper and middle classes and it is they who are being served by the decision not to raise fees. On the other reform issues, the Association recommended that admissions should be diversified so that 50 per cent are full time students and 50 per cent evening and afternoon students and that these part time students should have equality of status with full time ones. Admission to colleges should be limited to the academic and physical facilities of colleges (which is in contradiction with the concern for the poor sector referred to earlier) and admission to post graduate courses should be selective. Student-teacher relationships were also the subject of unexceptional recommendations and there was an endorsement in principle of the 10+2+3 staging, with further studies to be made on the 2 year courses. All this is now well worn and verbally accepted. The target date for their execution—the end of the Fifth Plan is a part of this verbalism. The end of the Sixth Plan is more realistic. But the main issue is the will to act. The will to act on the part of universities — teachers and administrators — is yet to be born. The new chairman of the UGC has emphasised the importance of using the full potential of the universities for creative research and contrasts the research productivity, of the universities in a science like physics with that of the national laboratories. The university has the advantage of researching, not for making a living, but as a means of promoting basic research, of replenishment of talent and is a good system for the communication of ideas. There is no need to contrast the universities and the national laboratories. Each has its function—one in pure and fundamental research and the other in applied and developmental research. But the university potential should be encouraged and exploited. He also recommends that if employment requirements are changed, the rush into colleges will taper off. If secondary education is vocationalised and polytechnics and vocationalised junior

colleges develop further such an eventuality will occur. And then the 36,000 colleges most of which are substandard, (according to the Union Minister of Education only 100 colleges in the Country are educationally viable in terms of undergraduate and post-graduate teaching and research), could become centres for part time education which would enrich them and meet the professional needs of working men and women. Finally a comment of the State Director of Collegiate Education that Tamil medium students performed better academically than English medium students —(barring his use of examination results as the criteria) might be an important pointer to the future medium of instruction in this State. The planning of open universities referred to in Vol. II No. 12 page 33 is progressing. Under these universities persons without previous educational experience can be admitted to the university courses and on successful completion will be awarded the usual university degree. Such a system will help to reduce the pressure of full time students and enrich the university teaching and learning system.

Student self help

A programme to enable students to obtain bank loans on easy terms for undertaking or continuing their studies has been launched in Madras with the help of the Rotary Club. In the initial stage the club will guarantee bank loans to qualifying students in their final year, which will be repaid when the student is employed. Over 400 loan applications have been made by final year students who face prospect of discontinuing their studies. This student loan system which is in operation in several European and North and Latin American countries is not only an act of social justice, it introduces a much needed element of seriousness in academic life by making obvious the investment nature of higher education and also leads to some reduction in the drop out or push out rate. In Calcutta, poor college students are being helped by the Bengal Self Reliance Samiti to earn Rs. 90 per month by selling tiffin in Government and private offices. The Samiti is a cooperative to which the students contribute 25 paise per day from their earnings. Like Kerala students, Madhya Pradesh students with teachers organised themselves in 14,000 committies, each student earning Rs. 5 a day in order to implement the Rs. 15 crores Central sector scheme for providing developed free housing sites to rural landless workers. As a result 9 lakh families of such workers are being provided housing sites. The programme has helped in canalising student energy, has reduced campus unrest, provided earnings and helped in an important programme of State development. This kind of student self help programmes should now be spread in this and other States by the student community.

Media and spread of education

The urgencies of the Country's literacy needs were highlighted during February at a series of functions at Hyderabad, Lucknow and Delhi to facilitate the veteran literacy worker Mrs. Welthy Fisher. At the Lucknow function, the Prime Minister and at Delhi the President of the Republic called attention to the contradiction between the rapid expansion of school education and the continuance of mass illiteracy in the Country. The literacy stakes are high. The Prime Minister referred to illiteracy as a social curse which "it is the pious duty of everyone to fight and eradicate". Literacy is essential for the success of our democracy, and is the only way, she states, of promoting better understanding and good will among people. Now these principles must be translated into literacy action programmes in every State as proposed by this State.

Such a programme will be immensely benefitted by the Fifth Plan provision to extend the range of television facilities to 50 per cent of the population at a cost of Rs. 112 crores. For some States TV could be used for the initial literacy programmes and for States like Tamil Nadu and Kerala it could be used for post literacy programmes to maintain and improve the literacy status of the neo-literates. The TV first phase which will be completed by the end of 1974 will involve the construction of six mother stations at Bombay, Srinagar (already completed), Madras, Lucknow, Calcutta and Jullundur and relay stations at Mussorie, Poona, Kanpur, Asansol, Amritsar, Bhatinda and Chandigarh. This first phase will cost Rs. 25 crores and cover 10 per cent of the Country and 17 per cent of the population. The second phase for the rest of the Fifth Plan will involve construction of TV stations in 11 State capitals, associated relay stations, outside broadcast vans and completion of permanent TV headquarters in Delhi. This phase will cover an additional 32 per cent of the area and 36 per cent of the population. What is important is that during the Plan period 40 per cent of the rural population will have TV viewing facilities, which can be used for functional literacy, family Planning and agricultural extension programmes. The first TV receiver set manufactured by BLRS, Madurai in the State was displayed in late January as a precursor of the 7,500 sets which the 3 units (2 in Madras and 1 in Madurai) will be producing, which will further increase to 15,000 soon. TIDCO is also planning to set up a joint sector project to produce 10,000 sets. As telecasting will begin in the State from the middle of this year, the Government has set up a Rural Television Committee chaired by the Chief Secretary to integrate and coordinate the work of the various departments regarding the installation and maintenance of TV sets in rural areas, organising and publishing the various programmes and helping in extending them to the neighbouring districts—Chingleput and North Arcot—and later to the whole State. The State is thus readying itself to use this important mass education media. Another important media to be expanded and more fully used in adult literacy and education programmes is the book. The Government has decided from this year to make 25 per cent of its grant to each LLA in the form of books and ensure that 50 per cent of the Union Plan Grant is used for purchase of State Government approved books. This will ensure that the books starved LLAs have a continuing flow of books. The Madras District Libraries Act is accordingly being amended to achieve this objective. A further media for the education and cultural programme is the decision of the State Government to help in the financing of 49 open air theatres in rural areas. Each theatre costs Rs. 7500, two thirds of which will be contributed by the Panchayat Union and the public of the area. The Government will contribute 1/3 of the cost and has allocated Rs. 1,22,500 for this purpose. The theatres will be one means of meeting the demands of the rural community for cultural development. Its fall out will be humanising the State's development programme.

Technical Education:

The 53rd annual convention of the Institution of Engineers and golden jubillee celebration of the Institutions' Tamil Nadu centre in Madras in February was an occasion for underlining the key role of technocrats and engineering in the planning and development administration of the State and Country. As noted earlier there is a growing consensus on the need to use engineers, technologists and scientists in plan formulation and administration. The

State Transport Minister went so far as to state that if engineers had been in charge of planning, the State would not be facing the power crisis, as the experience of technocrats running the nationalised State Transport undertaking shows. The use of engineers in planning long term power programmes, harnessing of unconventional sources of energy, water resources which the State has used up to the extent of 90 per cent in surface water was repeatedly stressed. To meet the growing demand for specialists in housing and transportation who had a background of engineering, sociology, psychology and economics, it is proposed to start in the College of Engineering, Guindy, a post-graduate programme in urban engineering which would cover the three main aspects of urban living-housing, traffic and environment.

Science :

The world wide celebrations of the 500 birth anniversary of Copernicus was celebrated in the Country in February with a Hindi translation of his work, De Revolutionibus, and a reminder of the scientific temper and methodology that he exemplified and to which this Country is traditionally attached and needs to be rededicated. On the occasion, the people were reminded that the Copernicus revolution dethroned man but enthroned reason and this contribution needs to be continued. The Union Ministry of Science and Technology is organising a series of nation wide discussions on the NCST Approach Paper to the Science and Technology Plan—(see Vol. III page 194) at Kanpur, Bombay, Calcutta, Bangalore, and Madras. At the first two seminars at Kanpur and Bombay the issues posed were mainly policy ones. The basic thrust of the plan is to reinforce the programmes for the elimination of poverty through the projects for housing, child nutrition, clothing, mass transport, domestic fuel, power and agricultural production. This is sound and the consequent problem is an educational and communicational one to involve people in this scientific movement. Also given the time constraint, the project should have a rigid time frame, should have an organisation which will ensure efficient and economical execution, should be monitored adequately, should use young scientists and technologists and not be a playground for the old and outdated and should demarcate the role of specialists, engineers, policy makers, parliament and political leaders. The other seminars should continue this debate and turn to some of the technical problems involved in the projects as the Bombay seminar did. The National seminar on Materials Science and Technology held on the occasion of the Institution of Engineers meeting in Madras in February recommended the setting up of a central council for research and development of materials together with a development council in each State to promote the use of new materials, educate in research and use of materials and create centres for use of locally available raw materials in housing. This will lead to indigenous development of scarce raw materials now being imported. At another February seminar on electronics held under the auspices of AIR and the Electronics Association, a central agency was recommended for acquiring indigenous and foreign know how in the electronics industry and to make the needed institutional changes in the import of raw material. This would also be a means of attracting industrialists in the Country to exploit indigenous technology in this fast growing field. Further to the Rohini rocket firing reported in the last issue of the Bulletin (page 195) the Indian made two stage Centaur rocket with scientific instrumentation was launched in early February from Thumba and successfully carried out its 3 experiments. For the

Fifth Plan a Rs. 200 crore space programme has been proposed to develop a multi-purpose domestic communications satellite which can be used for resource surveys through scanners and sensors and also be used in programmes of rural development, agriculture, education, meteorology, geology and industry. The Trivandrum symposium on acid soils in February considered the problem of rice growing and other agricultural production in acid soils. In Kerala most of the rice is grown on acid soils and there is need for adequate advice for the farmers on their acidity and salinity problems. One suggestion is to set up a national acid soil laboratory in the Kuttanad region where the Rs. 25 crores development scheme is at work to bring an additional 1.25 lakh acres under cultivation. Further to the recommendation of the Task Force on Education, Science and Technology, the Tamil Nadu Agricultural University is establishing an Agricultural Polytechnic in Pondicherry. The polytechnic will offer diploma courses in crop husbandry, farm engineering, dairying and horticulture. It is also necessary that it should train vocational agricultural teachers for the comprehensive schools to be developed in the State. A World Bank team visited the State in February for preliminary discussion and will be followed up by later studies in May on the Bank's financial support to expand agricultural education in the State. What is needed in the State are some basic decisions (see Vol. II No. 11 page 34 and 35) which can effectively use existing resources and the World Bank could help the State in arriving at these decisions.

Health

The student medical examination scheme in Conjeevaram involving 15,000 students of 47 schools who were examined by 53 doctors and 107 para-medical personnel showed a large incidence of leprosy and dental diseases among the children. They are now being treated in the hospital. How far this is due to malnutrition which affects 170 million pre-school children and expectant and nursing mothers in the Country (leading to the death of 10,000 children per month and probably to 40,000 in the next 3 months according to Chandigarh nutrition conference in February) needs study but even more, action. The Central Council for Research in Indian Medicine recommends the setting up of Regional Research Institutes in every State with a hospital and library attached. The Tamil Nadu Health plan provides for a more rapid development of indigenous medical research. The discussion of the National Health Service continues, with the Union Minister of Education emphasising the need for a single uniform high level service to both urban and rural people. He also suggests that medical training be linked to our social and economic realities and that pre-professional courses be separated from the professional and merged with general education — as the Tamil Nadu Health Plan proposes. The suggestions for upgrading the medical services at the district, block and panchayat level follow this State's Health Plan (see Vol. II No. 9 pages 32 and 33).

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V. Employment

The February issue of the CSIR manpower bulletin reports that 18,500 scientists and technologists who are working abroad registered in its register by January 1, 1973. The breakdown of those who registered is as follows :

Field	Total enrolment	Abroad	Returned	Returned as (% of total)
Science	5,833	2,840	2,993	51
Technology	1,136	537	599	53
Engineering	6,977	3,637	3,340	48
Medicine	3,582	1,660	1,992	54
Total	17,528	8,674	8,854	—
Social Sciences	338	198	140	41
Business Administration	612	401	211	34
Grand Total	18,478	9,273	9,205	50

In general about 47 per cent of scientists studying or working abroad return home. While engineers returning home have increased from 28 per cent to 36 per cent, that of medical personnel declined from 27 per cent to 17 per cent over the past 3 years. Engineers constitute 39 per cent of the Indians abroad who registered, scientists 33 per cent and doctors 21 per cent, with chemists (33 per cent) being the largest scientific group and mechanical engineers among the engineering group. 36 per cent are in the U.K. and 32 per cent in the U.S. The rising trend of educated job seekers (matriculates and above) on the live registers of employment exchanges referred to in Vol. II No. 9 pages 36 and 37 and No. 12 page 36 of the Bulletin was officially confirmed by the Minister of Labour's statement in Lok Sabha on February 22, 1973. As on June 30, 1972 the educated job seekers amounted to 26,11,827. In 1969 December it was 15.26 lakhs, in December 1970 18.21 lakhs and in December 1971, 22.95 lakhs. The special programme to create 5 lakh jobs a year for the educated unemployed referred to earlier and in the last issue (page 198) has not come a day too soon. The rate and quality of execution of the crash employment programme referred to in Vol. II No. 10 page 31 of the Bulletin is still the subject of some (uncertain) discussion. Even the statistics are a little suspect as they represent the aggregation of reports from the State which are themselves an unverified aggregation of block reports. The scheme, it will be recalled, was launched in April 1971 to generate employment for 1,000 persons in each district through a network of rural projects of various kinds. It was aimed at providing additional employment to 4.2 lakh persons at a total wage cost of Rs. 40 crores plus Rs. 10 crores which was to be spent on equipment to ensure the quality of work projects. It is now reported that in the first year Rs. 31.22 crores was spent in generating Rs. 799 lakhs mandays of employment, through which 54,231 hectares have benefitted from minor irrigation, 4,998 hectares from soil conservation, 5,871 hectares from afforestation, 37,353 hectares from flood protection, 30,896 hectares from drainage and anti-water logging while 27,396 kms. of roads and 1,445 culverts were built. For 1972-73, till January Rs. 23 crores have been spent generating 621 lakh mandays of employment. Tamil Nadu is among 10 States which have spent the resources rapidly and exceeded the employment targets. But as noted earlier this entire report is based on incomplete and in some cases unverified district and block reports. 50 districts out of 355 have not reported and funds have been released even without this minimum checking. The Planning Commission's appraisal of this important effort is awaited with interest.

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VI. Other Items

ICSSR Review Committee

The first meeting of the Committee at the end of January established its time table and methods of work. Following the committee discussion 4 sets of questionnaires have been addressed to some 2,000 social scientists, Heads of University Departments and research centres, applicants of ICSSR research grants and users of research to send in their comments to the committee by midMarch on the state of research in the discipline, the past functioning of ICSSR and its future role. In addition 6 universities are organising colloquia on these issues in order to present an agreed set of recommendations and comments. The committee will also meet the 7 disciplinary standing committees of the Council, directors of centres and social scientists during the course of its meetings in Delhi, Bombay, Simla, Calcutta, Madras and Trivandrum. At its second meeting at the end of February, the committee exchanged views with the standing committees on Sociology, Psychology and Political Science, as a result of which there was general agreement on the satisfactory quantitative expansion of research in each field but with problems of too great reliance on foreign models and neglect of Indian research work, absence of relation to national priorities, dispersal of effort, neglect of younger researchers and non-use of research by the potential users in the world of business and government. There was also a first meeting of the committee with the chairman of UGC at which the guidelines of cooperation between the 2 institutions and the main concentration of UGC on teaching and related research and that of ICSSR on uncharted fields and applied research emerged.

Seminar on Nehru and his contribution

The February Seminar organised by the Centre of Social Research, Madras, on Nehru and his contribution brought together social scientists and political leaders from all over India. There was general agreement that Indian socialism owes its specificity to Nehru and that it is on the one hand based on political democracy whose institutional frame was developed by him and economic democracy, on the other, for which he took the first steps. These included the devising of planning as a development instrument in a non-communist country, the specificity attained today in the attack against poverty and the importance of people's participation in all development programmes.

All India conference of shareholders

The Madras Shareholders Association organised in February a conference on the protection of small shareholders. The importance of spreading share holding was accepted—both as a means of democratic participation in the business world and as a means of promoting savings of the small house holder. Various legal and fiscal measures including amendments to the Companies Act were suggested to increase the number and protect the interest of small shareholders. Above all a plea was made for small shareholders to attend the annual general meetings of the companies and effectively exercise their voting and other rights to safeguard their interests. To start with, small share holders should join the Share Holders Associations which, against the share holding population of 2 millions, (which exceeds the tax paying population of 1.59 million) have a member-

ship of no more than 15,000. The RBI 1965 survey showed that 95 per cent of all shareholders held shares below Rs. 5,000 though they accounted for only 22 per cent of the value of total holdings. This group is increasing constantly, as between 1959 and 1965, it went up by 33 per cent in number and 25 per cent in value. Their protection and further increase in a democracy committed to socialism is imperative.

Senegal

Senegal is completing its third Five Year Plan this year and launching its Fourth Plan next year. Its industrial sector has performed well (at a growth rate of over 10 per cent), but its agriculture is lagging due to prolonged droughts over the last 3 years. The Fourth Plan is concentrating on anti-drought investment and a step up in what we call coarse grains production, which is the staple food of the people. There is here a possibility of cooperation between India and Senegal which is one of the requests that emerged during discussions on its Plan. The President of the Republic is planning to visit India in response to an invitation from the Prime Minister. One of the issues in which he is very interested is the development of closer cultural cooperation between the two countries. In his doctrine of negritude, of which he is the creator and exponent, he calls attention to the linguistic and cultural relations between the Negroes and the Dravidians. In pursuance of this line, the Senegalese Professor of Linguistics is coming to the University of Annamalai to undertake a 2 year research study on Dravidian linguistics and its relation to Wolof, the major Senegalese language.

College Day

February and March were the season of annual college days. Stella Maris College celebrated its college day at the end of February. The annual report for the year presented by the Principal was a record of outstanding academic achievements by the staff and students, along side of important development activities, in rural improvement and flood relief action by the members and a wide variety of artistic, cultural and literary activities. Above all the devotion and loyalty of the staff and the moral climate of the institution makes it an island of sanity in the unsettled world of higher education. Vivekananda College celebrated its annual day early in March. It was a memorable occasion because its devoted and distinguished Principal is retiring at the end of the academic year. To him in large measure, the college owes its sound academic traditions and its moral and spiritual trends following in the work of its founder saint. The college has had a distinguished educational record, despite its growing members and financial limitations. The Principal in his report raised the problem of pressure of the numbers of students seeking admission in relation to the limited physical and intellectual resources of the institution and issues faced in associating student representatives in the management of the college. These two institutions are among those that qualify for the system of autonomous colleges by reason of their academic outlook and moral strivings — when the system is launched in the Fifth Plan period.

March Development Seminar

The paper for the March Development Seminar, Large and Medium Industries, by Professor S. Sampath, Deputy Director, Indian Institute of Technology, Guindy, along with a summary of the discussion of the paper at the seminar chaired by Dr. A. Ramakrishnan, Director, Matscience, Madras, on March 29th appears as the first article in this issue.

Second Article

Another article, Educational costs and teachers supply appears as the second article in the issue.

Book Review

A review by Miss Gajalakshmi, Professor and Head of the Department of Economics, Madurai University, of "the Techniques of Perspective Planning" — a joint publication of the Madras Institute of Development Studies and the Institute for Techno-Economics Studies, appears in the book review section.

LARGE AND MEDIUM INDUSTRIES

By

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1. Introduction

The Task Force on Large Industries set up by the State Planning Commission of Tamil Nadu in November, 1971, completed its study and submitted its Report in November 1972. The Report contains an assessment of the scope for further development of the existing industries and for the emergence of new industries in the large and medium sectors.

The Task Force has emphasized the need to place high priority on the promotion of agro-based and mineral-based industries and on the fostering of process-industries in the petro-chemical, electronic, electric and mechanical engineering fields. A strong plea is also entered for the provision of adequate financial support by various agencies and for the systematic development of the infrastructural framework needed for industrial growth.

The Task Force proposes an outlay of Rs. 2255 crores, in the State, Central, Co-operative, Joint and Private Sectors, in the Perspective Plan Period (1972-84), the aggregate reaching Rs. 1070 crores by the end of the Fifth Plan Period and the balance of Rs. 1185 crores representing the investment during the Sixth Plan Period (*Annexure I*).

The Task Force ascribes the progress made by Tamil Nadu during the last decade and a half to the following factors: a favourable economic base for industrial development; the enthusiasm displayed by old and new entrepreneurs; people who are keen to move forward and are prepared to adjust themselves to new situations; and an enlightened State Government anxious to progress on the industrial front. The Task Force is hopeful that if action on the lines proposed by it is carried through, a growth rate ranging between 10 and 12% per annum is achievable. It sees clear possibilities of the movement of the State economy in a direction that will bring in returns like enhanced employment opportunities for the people and a doubling of the standard of living by the end of the Perspective Plan Period.

2. Retrospect

It is the finding of the Task Force that, during the last fifteen years, the State has made considerable progress in a wide range of industrial activities—metals and metallurgical products; chemicals; agricultural and farm equipment; mechanical and electrical engineering products; railway coaches, automobiles etc.

There are various ways to gauge progress. The Task Force cities a few :

(i) Number of Industrial Licences Issued

Period	Issue of Licences	
	Field	Number
First Plan through to December 1970	Mech. Engineering	232
	Metallurgy	121
	Fertilizers and Chemicals	106
	Agro-based Industries	100
	Paper, Soap, Cement and Timber Products	228

(ii) Registration of Companies

Period	No. of Companies	Paid-up Capital
		(Rs. in crores)
First Plan	586	12.73
Third Plan	900	116.55

(iii) Manufacture of Industrial Commodities

Product	Percentage Increase in output from 1961 to 1971
1. Tyres (Giant & Cycle).	342
2. Grinding Wheels	303
3. Staple Fibre Yarn	302
4. Power Transformers	294
5. Electric Motors	271
6. Refractories	191
7. Dry Cells	142
8. Cement	136
9. Typewriters	135
10. Sugar	130
11. Motor Cycles	123
12. Caustic Soda	108

The following are cited as examples of new products which made a mark on the industrial scene in recent years: agricultural tractors, paper, steel and cast iron castings, forgings, pipes and tubes, plastics, automobiles, cycle tubes and tyres and few electrical and electronic items. Among industrial enterprises which came up due to the initiative of private entrepreneurs are: the chemical and aluminium industries complex at Mettur; the automobile and auto-ancillaries complex in and around Madras; and the foundry and electrical motor industries in Coimbatore.

An indication of the pace of progress in the State sector is given by the fact that from an outlay of only Rs. 1.6 crores during the Third Plan Period there has been a step-up to Rs. 17.45 crores in the Fourth Plan Period—essentially due to the State embarking on its own, for the first time, on the development and promotion of large-sized industrial units—such as the continuous Casting Steel Plant (Concast) at Arkonam and the Cement Plant at Alankulam. The Textile Corporation has assumed responsibility for a programme of modernization of Textile Mills in the State.

The Fourth Plan Period has also witnessed a significant beginning made in respect of the development of the Joint Sector for industries in the Core Sector. The Petro-Chemical complex at Tuticorin—the fertilizer unit of SPIC — a joint sector project, in which the Tamil Nadu Industrial Development Corporation (TIDCO) is actively interested, is likely to go into full operation by the end of the Fourth Plan Period, at a cost of Rs. 73.5 crores. TIDCO as well as SIPCOT (State Industrial Promotion Corporation of Tamil Nadu) have numerous schemes on hand which will be implemented in the coming years. SIPCOT has successfully encouraged the promotion of new industries in certain backward areas of the State. The Tamil Nadu Industrial Investment Corporation (T.I.I.C.) has earmarked funds for the expansion of existing industrial units in the private sector.

In the Central Sector Projects located in the State (listed below), the investment stood at Rs. 377 crores by the end of 1969-70.

1. Neyveli Lignite Corporation, Neyveli.
2. Integral Coach Factory, Madras.
3. Surgical Instruments Plant, Madras.
4. Hindustan Teleprinter, Madras.
5. High Pressure Boiler Plant, Tiruchy.
6. Ordnance Factory, Tiruchy.
7. Hindustan Photo Films, Ootacamund.
8. Heavy Vehicles Factory, Avadi.
9. Madras Refineries, Manali.
10. Madras Fertilizers, Manali.
11. Indian Oil Corporation, Madras.

The Neyveli Lignite Corporation is expected to play a crucial role in power generation. But due to technical and other difficulties, full use is not being made of the thermal station capacity or of the fertilizer unit capability. There is an urgent need to devise measures to raise the output of lignite so that the integrated project may make its full contribution through larger supplies of electric power, chemical fertilizers and lignite briquettes. The Integral Coach Factory is in good shape and, with an increasing demand for coaches of different types from the Railways and large export orders, the output is being stepped up continuously. The Surgical Instruments Factory and the Photo Film Unit are experiencing difficulties in fully utilizing their capacities and efforts are on to overcome technical problems. The High Pressure Boiler Plant has been remarkably successful and is a model as a Public Sector Undertaking steadily increasing its output and enlarging the scope of its products. The Ordnance Factory at Tiruchy is meeting the requier-

ments of the Defence Services in the form of rifles. The Heavy Vehicles Factory at Avadi has been successful in producing tanks at the stipulated rate and is planning to diversify its production. The Teleprinter Factory at Madras has been functioning profitably and units suitable for export are in production. The Madras Refinery has a record of efficient functioning. The Fertilizer Unit has got over its initial difficulties and, since November 1971, has shown a steady increase in the output of fertilizers. The Indian Oil Corporation has been constructing additional facilities for handling a large volume of petroleum products ; and a Blending plant has been established at the Manali site for producing different kinds of lubricants.

In an over-all assessment, these undertakings make a significant contribution to the vitality of the regional economy.

3. Strategy for Advances During the Perspective plan period:

3.1. *General Picture:*

The emphasis during the Perspective Plan Period should be on the expansion of the existing agro-based and processing industries. A change in the pattern of agricultural production is called for, in order to increase the yield of commercial crops, and this will give an impetus to the growth of agro-based industries. The accent will also have to be on the establishment of processing industries and such mineral-based industries as can be implemented with a more intensive exploitation of available mineral resources such as salt, magnesite and magnetite iron ore. Other needs are : the intensification of geological exploration in order to find out if oil, can be struck in the Cauvery basin and off-shore basins and of new bauxite and other non-ferrous metal deposits can be located ; a systematic programming of replanting of denuded areas in the forest regions ; and effective use of raw materials like bagasse capable of regeneration on an assured basis.

Note should be taken of the useful contribution that can be made to the national pool by stretching to maximum advantage the lead already possessed by some industries in the region. In this sense, the sugar and the cement industries will have to be developed on ambitious lines ; and the cotton textile industry should be put back in its pre-eminent position. The same approach will be valid for the automobile and allied industries.

In respect of chemical fertilizers, the all-India figure is less than 50% of the total consumption and it is unlikely that this gap will be made up even by the end of the Fifth Plan.. The State will have to embark on the expansion of the capabilities of the existing units and also try and promote an entirely new unit based, if need be on a different feed-stock like fuel oil. There should be a greater exploitation of the vast salt resources of the State, with expansion of production capacity for caustic soda, soda ash and the like.

There is wide scope for growth in the mechanical, electrical and electronic equipment industries. The Salem Steel Plant will have a catalytic effect on the development of the mechanical engineering industries. The expansion of the High Pressure Boiler Plant at Tiruchirapally will lead to the promotion of many ancillary industries. A large seamless pipe plant will have to come up in the Central Sector either at Tiruchy or Salem. The Teleprinter Factory and the Photo-Film Factory will go in for substantial expansion. We may expect the establishment of Central Sector Units for the manufacture of Telecommunication equipment, electronic components, special cables and other items.

The State Sector will increase its output of billets, sponge iron, cement, fertilizer and other items, besides contributing substntially to the development of Joint Sector Projects through TIDCO and SIPCOT, while TIIC will extend help to existing and new industries in the private sector.

3.2. *Specific Areas for Development—Problems and Prospects*

The Task Force has identified 14 areas as important ones corresponding to the needs and aspirations, as well as the potential for growth, of the people of the State.

3.2.1. *Metal-based Industries*: (Proposed Investment: Rs. 175 crores)

The State has no industry for the production of basic metals except for the Aluminium Plant at Mettur. The other major metal-producing industry envisaged is the Salem Steel Plant. Chances for the production, on a large scale, of basic metals such as copper, zinc, aluminium etc. do not seem bright unless large-scale deposits are unearthed by fresh exploration. Another difficulty is the non-availability of cheap power and coal in adequate quantities, which inhibit the production of basic metals on a large scale. It would be advisable to develop industries engaged in intermediary processing, producing, from the basic metals, semi-finished raw-materials needed in a variety of industries.

The manufacture of alloy steel can be taken up on a scale that may meet not only the State's requirements but also the regional needs. Steel processing industries can be developed fully, as a good base exists and the required technical personnel can be trained quickly. It will be advisable to embark on a large-scale expansion of machinery required in the textile, cement and sugar industries as well as castings and forgings of different kinds.

3.2.2. *Automblle and allied Industries*: (Proposed Investment Rs. 150 crores).

Tamil Nadu has a pre-eminent position in the development of the automobile and ancillary industries. The State commands a sizeable share of all-India production in cars, commercial vehicles, tractors, motor-cycles, scooters, auto-auxiliaries and bicycles. There has been a slowing down in respect of cars and light commercial vehicles in recent years but is likely that the difficulties will be surmounted.

The investment pattern proposed for the twelve-year period is: Rs. 20 crores for cars; Rs. 40 crores for commercial vehicles; Rs. 10 crores for Bicycles; Rs. 20 crores for ancillaries; Rs.30 crores for tyres; and Rs. 10 crores for motor-cycles and scooters. The industry has to be assured an adequate supply of steel. It is desirable to set up an assembly-plant for Jeeps to cater to regional needs. There is also a case for establishing an R & D Unit in the State—as a collaboration effort between an academic institution and industry.

3.2.3. *Chemical and allied Industries*: (Proposed Investment: Rs. 208 crores).

An organic Chemical Plant, involving a capital investment of Rs. 50 crores, is recommended. A highlevel of output from it will facilitate the growth of the man-made fibre industry, dye-stuffs, pharmaceuticals, fine chemicals and insecticides.

The capacity of Madras Refineries should be stepped up. A large size Cracker Plant should be established to produce poly-ethelien, PVC, Polystyrene, ethylene, Glycol and SBR. Refinery schemes for upgrading crude oil for the manufacture of Naphtha should be vigorously pursued.

In the area of Inorganic Chemicals, the production of Caustic soda should be doubled; a plant for Caustic Potash should be set up; also a plant for soda Ash, involving an investment of Rs. 10 crores, to make good use of the State's abundant salt reserves. Steps shoutd be initiated to produce good quality salt and recover by-products like gypsum, potassium chloride, bromine and light magnesium carbonate. Production facilities should be established for the manufacture of metallic sodium, metallic magnesium and elemental phosphorus. Plants should be set up for the following: potassium chlorate, borax and boric acid and sodium hydrosulphite.

New distilleries should be established for utilizing increased quantities of molasses for producing industrial alcohol for supply to the chemical industry in the areas of fine chemicals, cosmetics, dye-stuffs and intermediates.

A coke-oven plant, which may cost Rs. 5 crores, should be set up, to meet the demand for high-temperature coke. It will also produce by-products which may be used in the organic chemicals industrial development e.g. ammonium sulphate, benzene, toluene, naphtha, pitch, coke-bricks etc.

A large-sized Pharmaceutical Unit, with an investment of Rs. 10 crores, is recommended to be set up at the Manali Complex, for producing a wide range of antibiotics, special drugs and fine chemicals based on petro-chemical inter-chemical intermediates and other raw materials.

There is scope for a number of additional units. Illustrations of these are:

Nylon Tyre Cord Plant;

Nylon Textile Filament Unit;

Nitric Acid Plant (at the slte of the Madras Fertilizers) Vinyl Monomer Plant;

Rubber Tyre Project (Joint Sector at Ramanathapuram). Expansion of the Viscose Staple Fibre Plant.

It is also essential to increase the area of cultivation of eucalyptus and wattle.

3.2.4. *Cement, Ceramics, Refractories and Glass* (Proposed Investment: Rs. 55 crores)

Tamil Nadu produces 47% of the total quantity of cement produced in the South Zone and 17% of the country's capacity. Further expansion is vitally dependent on the continuity of freight pooling. The large availability of raw material resources should be exploited and there should be sufficient production to meet the deficient pockets in the Northern and Western Regions of the country. Rail transport bottlenecks are a serious impediment. A fair pricing policy is also needed. 3 additional units creating a capacity of 4 lakh tonnes are recommended.

The State offers ideal conditions for the setting up of new units for white-ware ceramics. The plant at Vriddhachalam is doing well. Two more plants, for the manufacture of stone-ware pipes of large diameter, are recommended.

The existing Refractory Units in the State should be augmented. Three new units are proposed for the manufacture of mechanised bricks.

There is scope for a number of units in the field of glass manufacture; glass bottles; glass shells for the lamp industry; vacuum flask; glass fibre; sheet-glass.

3.2.5. *Electrical Industries*: (Proposed Investment: Rs. 80 crores)

The State has built up a sizeable capacity for the manufacture of power and distribution transformers, house service—meters and electrical insulators. There

may not be a need to expand the capacity for these during the Fifth Plan, but a doubling may be in order during the Sixth Plan Period. The manufacture of fans—table-fans, ceiling-fans and fans for industrial uses-will need augmentation. A large unit for G.L.S. lamps, fluorescent lamps and miniature and decorative lamps may be a useful investment. At present, there is only one cable unit for manufacturing the A C S.R. and other types; there is no facility for underground power cables and cables for special purposes. A large unit for the manufacture of special cables may be worthwhile.

3.2.6. *Electronics* (Proposed Investment : Rs. 150 crores)

The only significant step taken in this area by the State is the establishment of a Functional Industrial Estate for Electronics and Instruments in the City of Madras. In view of its role in stimulating the growth of the electronics industry in the industry, similar Estates should be speedily established in other cities like Coimbatore, Madurai and Tiruchy.

In the medium and large-scale sectors, it is recommended that the State should take steps to establish a production facility for TV sets (20000 unit) and a manufacturing unit for Integrated Circuits. The State should also set up a centralised testing, certification and product develop ment laboratory; should seek central assistance in the liberal importation of primary new materials; and in the establishment of duty-free zone, in the vicinity of the Madras airport, for electronic components and equipment.

A continual effort should be made to update the capacity to manufacture items of equipment, components, devices and auxiliary equipment needed to serve in areas such as process electronics, instrumentation, medical electronics and digital systems.

3.2.7. *Cotton Mill Industry* (Proposed Investment: Rs. 235 crores)

The Industry is in a sick condition and the following remedial steps are suggested :

the finding of ready markets for the yarn produced in the State;

the installation of processing units;

ways and means of assisting the needs of modernization of the Mills;

adequate funds for R & D in the development of cotton cultivation;

measures to ensure that the cotton needed by the industry in the State is produced in the State itself;

steps to stimulate cloth consumption throughout the country.

3.2.8. *Handloom Industry*: (Proposed Investment : Rs. 60 crores)

This industry occupies an important place in the economy of Tamil Nadu with an annual production of handloom cloth valued at Rs. 48 crores. Being a decentralised industry based on manual labour, it has been facing difficulties relative to raw material, finance, competition from power-looms and textile mills.

There will necessarily have to be larger expenditure on the provision of subsidies, supply of components for handlooms, establishment of units for the manufacture of the requisite chemicals. There will be a need to continue and even liberalize the system of rebates and new schemes for the marketing of handloom products. 4 million people are likely to be employed on handlooms. In planning this sector of activity, one has to take into account the new job opportunities that may become available and the anxiety of the weavers themselves to increase their incomes by partial mechanization of handlooms or enlarging of the power-loom sector.

3.2.9. *Sugar Mill Industry:* (Proposed Investment: Rs. 48 crores)

Tamil Nadu contributes a little less than 10% of the sugar production of the whole country. With its 16 Mills, the State produced, in 1971-72, 3 lakh tonnes. An increase in production to 65 lakh tonnes by 1978-79 and 90 lakh tonnes by 1983-84 is set as the goal. There is scope for setting up 12 more factories in the State with a daily production capacity of 1500 to 2000 tonnes.

The most urgent need of the industry is the delineation of a long-term policy on Sugar. The State should establish a Marketing Organization to handle the sugar produced in the State. There is a need to set up a few units, operating in conjunction with the existing Boiler Plants, for the manufacture of sugar plants and machinery. Greater attention should be paid to the quality and yield of cane per acre.

3.2.10. *Paper Industry:* (Proposed Investment: Rs. 150 crores)

Tamil Nadu produces annually about 42,000 tonnes of finished paper, in its three major units–Seshasayee Paper and Boards; Sun Paper Mills and Venkateswara Mills. The present consumption is of the order of 50,000 tonnes, and the shortfall in the State's production is made up by imports from up-country mills.

By 1983-84, the demand for different varieties of paper and paper products is likely to be around 165,000 tonnes. To meet this demand, a capital outlay of Rs. 130 crores on the manufacturing units and investment of Rs. 20 crores on raising plantations and their maintenance will be in order.

A cautious effort should be made to use bagasse for writing and printing paper, as existing raw material sources will present, in the coming years, serious problems owing to competing demands from other industries. Bagasse can also be regenerated in large volume because of the rapid growth in the sugar industry. The necessary incentives will have to be provided in order to release bagasse with the use of other forms of fuel like coal and furnace oil.

3.2.11. *Alcohol Industry:* (Proposed Investment: Rs. 5 crores)

It is known that the present total requirement of alcohol, for industrial and potable purposes, is of the order of 5 million gallons and 3 million gallons, per year respectively. It is estimated that these requirements will rise to 10 million gallons and 8 million gallons by 1983-84. The State has 2 big-sized and 2 medium-sized units at present. To meet the rising demand, 3 or 4 new units, with an investment of Rs. 5 crores, will have to be started. There will be no problem with regard to the availability of molasses as sugar production will have reached 1 million tonnes by the end of the Sixth Plan.

3.2.12. *Vanaspati Industry:* (Proposed Investment: Rs. 10 crores)

The scope for expanding this industry is rather limited, as there is no strong demand for this product in the Southern Zone. It is likely that, in the latter half of the Perspective Plan Period, there arises a higher aggregate demand for edible oils and the greater proportion of the output at that time may be in the form of Vanaspati. At that stage, the State will be well advised to install additional units, to meet its own demands as well as for export.

3.2.13. *Rice Milling Industry:* (Proposed Investment: Rs. 35 crores)

Tamil Nadu raises paddy in 7.2% of the total sown area in the country and

produces about 12.5% of the aggregate national produce. The Government of Tamil Nadu leads the other States by establishing the largest number of modern rice mills—13 units in addition to a pilot plant. The Food Corporation of India has 4 units in the State.

As 90% of the Mills belong to the huller type, the Government of the State has taken a decision that all new mills to be licensed will be sheller mills with polishing cones and that the existing mills will be converted into sheller mills in a phased programme in the next five years. This scheme of modernization, which will not only improve the quality of the rice but effect substantial savings in the yield, will help to recover the investment in less than 3 years.

3.2.14 *Fruit Processing Industry:* Proposed Investment: Rs. 5 crores)

The Fruit industry has not developed adequately in Tamil Nadu, although there are good potentialities in the region. The State has wide scope for developing fruit processing on healthy lines – particularly in the case of mangoes, pine apples, banana and grapes. But a number of steps are prerequisites for progress in this challenging and interesting field: screening of existing varieties of fruits and vegetables to judge their suitability for processing and extended cultivation; research projects for evolving suitable varieties for processing and ensuring increase in yield per acre; link-up of processing units with growers through co-operatives; adoption of health regulation, control and inspection methods to keep in line with international standards; adequate ware-housing and cold storage facilities at production centres, improved methods of packaging; refrigerated trucks and wagons for transport; establishment of model processing units, and import of precision equipment such as vacuum cleaners, automatic filling machines, levelling machines etc.

3.3 *Improved Infrastructural Requisites for Industrial Expansion:*

The Task Force has highlighted the importance of paying urgent attention to the following for ensuring planned economic development: land and associated facilities; water resources; power requirements; communication net-works; raw materials; financial policies and institutions for the development of large and medium industries.

3.3.1. *Land and Associated Facilities:*

While industrial Estates can take care of the needs of small and ancillary industries, a new approach will have to be evolved for developing plots for large industries. Large blocks of land will be needed and considerable advance action will have to be initiated by Government. It is suggested that such blocks may be allowed to come up, in the vicinity of metropolitan cities (25—30 miles) on either side of National Highways. The cost of development, including provision of roads, water—supply and electricity, can be met from the proceeds of sale of the developed sites. Each industrial plot, visualized as a collection of 30 medium—sized industries, with an area of 20 acres for each industry, together with 200 acres for house—sites, will require about 800 acres of land. 10 such plots will need 8000 acres. If the 8000 acres are sold to industrialists at the rate of Rs. 15,000 per acre, resources to the extent of Rs. 12 crores become available. All over the State, 10 to 15 new complexes may be established.

The power needs of the industrial estates, of the order of 1000 Megawatts, will have to be met from suitably located coal—based thermal stations. The Railways will have to be converted into Broad

Gauge to ensure quick movement of raw materials and finished goods.

3.3.2. *Power Requirements* :

For the development of new industries, there will be a need for large quantities of electric power. Inspite of the fact that the State has been in the vanguard of the development of power resources and its per capita consumption of electricity has increased five-fold in the past two decades, there is an unsatisfied demand for power and dependence on supplies from neighbouring states. Monsoon failures add to the difficulties.

There is a case for creating an additional capacity, to the tune of 6000 MW by 1974-84, out of which about 75% will be thermal, based either on coal or nuclear fuel. If hydel capacity is to be created to meet the requirement, the target will have to be much higher because of a lower load factor. There is not much scope left for finding additional hydel capacity except with the co-operation of the neighbouring states of Kerala and Mysore. Thermal stations will have to be established at Coastal points with adequate agreements for the import of coal by sea.

The requirements posed by industries alone will be of the order of 3500 MW in the Perspective Plan Period and this goal can be realized only if a Super Thermal Station is constructed at Neyveli, having a a capacity of 1000 MW, based on a second mine cut. Tuticorin should have another Super-Thermal Station of 1000 MW, to be activated, in two stages. Ennore will also have to be expanded, simultaneously with the Atomic Plant at Kalpakkam, for increasing the capacity to 600 MW. These projects will give a capacity of around 2600 MW and a decision has to be made on a Second Atomic Power Station in the State. It may be advisable to think of erecting a big thermal plant in Mettur, along with the possibility of plants at Cochin and Kothagudam, based on coal, to supply power to the Region.

In the final analysis, power development will have to be carried out on a regional basis with integrated operation and an integrated creation of thermal and hydel capacity. All planning of industrial development will be infructuous, if there is no clear thinking in regard to the implementation of power projects on a continuing basis.

3.3.3. *Water Resources:*

The availability of water for industrial purposes will pose serious problems as any competition for securing a share out of established resources should not be allowed to result in the reduction of supplies for irrigation purposes. Scientific water-management would be helpful in making economic use of scarce water-resources but underground water resources will have to be scientifically exploited so that there is no undue depletion or the emergence of problems arising out of the tapping of unsuitable water involving costly improvement. De—Salination of sea-water on a large scale will have to be attempted. The manufacture of large quantities of salt in the process will help in meeting the needs of the salt-based industries. But a distinct improvement in the availability of water can come about only if there is an inter-linking of rivers and the prevention of river-waters from wasting themselves into the sea. This is an important aspect of the water-resources problem.

3.3.4. *Communication* :

The problems with regard to rail, road and sea transport are easier of solution.

The road transport net-work can be easily strengthened with an improvement of the quality of the surface and the width

of roads and the construction of cement concrete stretches wherever there is heavy density of traffic. It is only a question of allocation of resources, and the State possesses the requisite technical personnel and management capacity.

In respect of railways there will have to be a uniform broad-gauge system throughout the State, and the conversion of meter-gauge system and electrification of the Railways will have to be done on a time-bound basis. Until such time that the railway bottlenecks to the North are relieved, alternate arrangements will have to be made for moving bulk and even high-rated commodities by sea routes and roadways. A large fleet of medium-sized ships will have to be deployed to bring coal, gunnies and other items and taking back quantities of cement, fertilizers, engineering goods and other items.

3 3.5. *Raw Material*:

There should be an adequate arrangement for making 'banks' of scarce raw materials—like steel, non-ferrous metals, coal and imported raw materials. The main industrial consumers will have to make their own arrangements for securing supplies of raw materials and components. But the State Government will help the smooth functioning of different industries if stock-yards for commodities, which have to be procured from sources outside the State, could be created on its own or in co-operation with the concerned industries. With a rising level of production and growing responsibility, any difficulty in obtaining supplies of raw materials and components will have serious consequences on the health of the economy besides resulting in heavy loss of production. The best results can be achieved by according high priority to the strengthening of the infrastructural facilities and special attention to problems that will have to be tackled on an inter-State basis.

3 3.6. *Re ource Mobilization*:

The Central Sector Schemes for Rs. 785 Crores will be implemented with funds completely provided by the Central Government. The State Government's direct investment in its own projects and those in the Joint Sector, including assistance by way of subsidies, loans and direct participation in equity and preference capital of the Joint Sector projects, will go up to Rs. 250 crores. Out of the total of Rs. 2255 Crores for the Perspective Plan Period, there will thus be a balance of Rs. 1220 Crores which will have to be found by the promoters in the private, co-operative and Joint Sectors. The new entrepreneurs may provide about Rs. 150 crores, while the internal resource of the existing and new undertakings can account for Rs. 300 crores, including provision toward depreciation charges. About Rs. 770 Crores will have to be gathered from the investing public by way of issues of equity and preference shares, loans and other forms of assistance from the term-lending institutions, the LIC and the banking System.

4. Outlay during the Perspective Plan Period.

The total outlay during the Perspective Plan Period is likely to be *Rs. 2255 Crores* (*Annexure I*).

During the Period, 1972-79 the aggregate investment by the State, on account of subsidies, modernization of the sick textile units and the promotion of Joint Sector Projects, will be *Rs. 320 Crores*. The Central Sector Projects, including the Salem Steel Plant, expansion of the Tiruchy Boiler Plant and the Second Mine Cut at Neyveli, will mean an investment of *Rs. 450 Crores*. In the private sector, there may be fresh investments to the tune of *Rs. 300 Crores*. The aggregate

outlay in respect of all the Sectors will approximately be *Rs. 1070 Crores* during the first seven-year period.

The balance of *Rs. 1185 Crores* will be invested during the Fifth Plan Period (1974-79). The State Government and its agencies will generate an investment of *Rs. 375 Crores*. The Salem Steel Plant would have been completed, but there are a number of other projects for Central assistance and the total outlay on these may be in the region of *Rs. 335 Crores*. The balance of *Rs. 475 Crores* will be the responsibility of the private and Co-operative Sectors.

As a result of its study, the Task Force has reached the conclusion that impressive progress has been made by Tamil Nadu during the last 15 years and the State is poised for a take-off in industrial production with a growth rate of 10 to 12% during the Perspective Plan Period. In order that the Industries are suitably distributed but grow up in an integrated fashion, contributing to the States' steady progress and to the country's pool of resources, the Task force makes a set of special recommendations. These recommendations, which crystallize as it were the thinking of the members of the various Working Groups which assisted the Task Force in its labour, are reproduced in *Annexure II*. They deserve careful study and whatever can be done should be done to see that they are implemented.

Report of the Task Force—A Critique

4.1. *Achievements and shortfalls during the Fourth Plan Period:*

It is well known that, at the State level, the following major achievements took place during the Fourth Plan Period :

a breakthrough in food production, transforming a food-deficit State into a food-surplus one, through the use of modern methods ;

spread of rural electrification with the prospect of *all* the villages in the State being connected up before the end of the Fourth Plan ;

housing for the weaker sections of the community ; impressive advances in the industrial sector with the engineering group emerging as the dominant growth-inducing sector ;

expansion of social service facilities in areas such as protected water-supply in urban and rural areas, health centres, education etc.

There have also been setbacks and there are serious constraints on future development programmes due to various factors :

the continuing mass poverty which keeps 52.5% of the population of the State below the poverty-line ; unemployment and the even more serious problem of under-employment. (As of September 1972, the number of unemployed persons in the State is known to be of the order of 5,00,000 and, of these, 2,00,000 are educated unemployed, including 13,000 engineers, 4200 diploma-holders and 16,500 craftsmen) ;

the serious imbalnce between power-availability, which suggests the staggering deficit of 700 MW by the end of Fourth Plan, with the prospect of the gap becoming bigger during the Sixth Plan ;

the poor performance of our manufacturing industries (5.8% in 1969, 5.6% in 1970 and 3.5% in 1971), ascribed to a multiplicity of causes-delays and time-lags in licensing and clearance procedures; shortage of critical raw materials ; industrial unrest and stoppages of work; slowing down of modernization and capital renewal programmes ; uncertain management policies resulting in non-utilization of full production capacity ; the crippling effect of power shortage;

the lack of relevance to our current national needs of much of what is practised in our educational system ; and

the economic malaise caused by inflation, stagnation in export trade and imbalances in our tax structure.

In its voluminous report of over 300 pages, the Task Force devotes less than 6 pages to a review of past performance and the pattern of growth of the large and medium industries and comes to the conclusion that 'spectacular progress has been made in many directions in the past two decades'. It is disappointing that the Report does not contain a quantitative appraisal of the targets that the State set for itself specifically during the Fourth Plan Period, nor a critical mid-plan evaluation of performance with an identification of the basic reasons for the shortfalls that occurred at various points. The difficulties experienced due to the power-shortage situation in the State and other bottlenecks in water-resources, communication facilities, raw materials supply etc. have been highlighted. But the nagging persistence of the unemployment phenomenon and the disastrous effects of industrial unrest affecting the progress of some of the major establishments have been barely mentioned.

In proposing a total aggregate investment of Rs. 2255 crores over the Perspective Plan Period, the Task Force has indicated an employment potential for 27.5 lakhs persons, of whom 7.5 lakhs will be directly involved in the large and medium industries sector and 20 lakhs will be indirect beneficiaries. The Report could have usefully elaborated on this manpower requirement and the methods by which they could be trained and made available.

4.2. *Priority for Capital-Intensive versus Labour-Intensive Activities.*

In the context of the Fifth Plan perspective, an important issue that has to be kept in view relates to the proportion of capital-intensive activities to that of labour-intensive activities that should be incorporated in the Plan to achieve the best overall results. Should we limit to the minimum, as considered inescapable, new investments on infrastructure facilities such as power, transport, capital goods enterprises like Electronics, intermediates like chemicals and essentials like pharmaceuticals, and divert our resources to the labour-intensive sector that facilitates self-employment as in construction jobs, road building, land and water development, farming operations and various small-scale industrial efforts ?

In the overall investment pattern proposed by the Task Force, no arguments have been advanced to establish the reasonableness of the quantum proposed by it for the development of large and medium scale industries in the State. As far as the State is concerned, the sizes of the Fifth Plan and the Sixth Plan have been set at Rs. 3200 crores and Rs. 6100 crores respectively. The idea of the Task Force appears to be that, out of these sums, Rs. 1070 crores during the Fifth Plan Period and Rs. 1185 crores during the Sixth Plan Period should be allocated to the large and medium industries sector. While the overall plan allocation doubles from the Fifth Plan to the Sixth Plan Period, the Task Force proposes equal magnitudes for the two periods. The reason for this departure in planning strategy is not made clear.

4.3. *Research and Development Effort :*

A reference to the Research and Development efforts needed to nurture the whole spectrum of large and medium

industries in which the State is interested and to release them from the bondage of complete reliance on foreign collaboration and knowhow is made only in the list of Special Recommendations. This should have been dealt with more fully. Technical institutions such as the Indian Institute of Technology, the Madras Institute of Technology and the State Engineering Colleges which have the facilities, the C.S.I.R. laboratories and the C.S.I.R. Regional Complex at Madras, the Atomic Power Project at Kalpakkam are among the institutions capable of undertaking R & D tasks relevant to the problems of industrial growth envisaged in the Report. It is also essential to ensure that major industrial establishments set up in-house R & D facilities.

4.4. *Management Education* :

A reference has been made, under Special Recommendations, to the need to set up a Management Institute for training managerial personnel. It is essential that, during the Fifth Plan Period, the State takes active steps to develop a managerial capacity equal to its increasing management responsibilities. It may be noted that the Task Force on Education, Science and Technology has proposed the setting up of an Institute of Management, Training and Development for Tamil Nadu. This Institute will provide basic education in Management problems, provide consultancy services in all management spheres and promote management techniques and methods appropriate to all kinds of industrial units.

4.5. *Techno-economic studies* :

The Task Force has called for the setting up of a special Evaluation Cell in the Directorate of Industries and Commerce which will continually monitor the progress of the medium and large industries in the State; initiate techno-economic studies on the needs of the Districts of the State; work out strategies to suit changing conditions; and help in restructuring priorities in planning. The importance of this salutory measure cannot be overemphasized.

4.6. *Computer Use* :

The role of automation and computerization, in the context of the modernization of the working of large and medium industries, has not been directly dealt with in the Report. With Hindustan Teleprinter Limited as the base, there is likely to be considerable manufacturing activity in the area of Computer Peripherals. The National Policy on Computer Development will lead to the availability of Small and medium-sized on-line digital computing equipment for industrial control operations. The State should be alert to these developments and take advantage of them to streamline and accelerate its production methods. A large Regional Computer Centre, built around a large modern Computer Centre suitable for both Scientific Computation, information-processing and commercial data-handling work will be available in Madras by mid-1973. This facility is of considerable relevance to the planning and management of large and medium industries. During the Perspective Plan Period, computing facilities may be expected to be established in several centres in the State. Early steps should be taken to train a large number of industrial personnel in the methodology of using computer-aids to improve the efficiency of their technical operations.

4.7. *Major Projects in Electronics* :

In the field of Electronics, the Task Force has recommended the setting up of a large-scale plant for Integrated Circuits and a plant for the manufacture of T. V. Receivers. The State should stake its claim with the Centre for the establish-

ment, in the State, of a Factory for providing Telecommunication Equipment (Switching Transmission) comparable to the I.T.I. in Bangalore; and a large-scale manufacturing unit, on the lines of ECIL in Hyderabad, for a wide range of electronic apparatus and equipment for instrumentation; control, electromedical appliances and communication. Power Electronics, meaning the deployment of electronic devices and systems, in the field of power-control, generation, transmission, distribution and utilization is assuming great importance and this State can advantageously enter this field.

Conclusion

The Task Force has concentrated its efforts on a delineation of the areas of activity-fourteen in number-which will form the bedrock on which the State's development of large and medium scale industries will take place. The tasks in each of these areas, the challenges to be met and the kinds of inputs needed to reach the desired goals have been described in some measure of detail. The Task Force has also quickly reviewed the major problems inherent in the building up of the basic infrastructural facilities needed to ensure the success of the new scale of operations—particularly in relation to electric power, water, communication and critical raw materials; and has suggested the ways and means by which these difficulties may be faced and overcome. For quickening the tempo of progress and to give the State a place of primacy in industrial development at the national level, the Task Force has formulated a set of recommendations to help the Government of the State to chart its course purposefully in its efforts to implement the planned programmes.

The entire success of the enterprise, dedicated to the promotion of technological self-reliance, will depend on the availability of resources. The Task Force draws attention to the whole spectrum of agencies which may be pressed into service to make possible these resources. Occupying a more important position than physical resources will be the spirit in which people view and participate in the strategy of planning, their willingness to work hard and their co-operation in helping to make the various choices which have one central aim—that of lifting the crushing burden of poverty from the backs of our people. A tone of robust optimism rings through the Report. We need this optimism to face with confidence the task that we assign to ourselves—the exercise by which we modernize our ways and move from industrial stagnation to industrial prosperity.

ANNEXURE I

A. Total Outlay for the Perspective Plan Period (1972–84)

			Rs. in crores
1.	*State Sector Projects*		
	(i) Sponge Iron Plant	4.00	
	(ii) Expansion of the Concast Plant (Arkonam)	3.00	
	(iii) Alangulam Cement Plant Expansion	7.50	
	(iv) Fertilizer Plant	74.00	
	(v) Projects implemented during the last 2 years of the Fourth Plan	10.00	
		98 50	98.50
2.	*Central Sector Projects*		
	(i) Salem Steel Plant	360.00	
	(ii) Salem Steel Plant — Expansion	100.00	
	(iii) Neyveli Second Mine cut	30.00	
	(iv) Expansion of existing Central Sector Units	25.00	
	(v) Zinc and Copper Smelter Plants	50.00	
	(vi) Heavy Water Plant	15.00	
	(vii) Industrial Refinery	60.00	
	(viii) Seamless Steel Tubes Project	50.00	
	(ix) Electronics	75.00	
	(x) Desalination Plant	20.00	
		785.00	785.00
3.	*Co-operative Sector*		
	Sugar Factories, Paper Mills and other Establishments		30.00
4.	*Industrial Research*		
	Research and Development Work		50.00
5.	*Joint Sector and Private Sector Projects*		
	(i) Metal-based Industries	175.00	
	(ii) Automobiles and allied Industries	150.00	
	(iii) Chemical and allied Industries	208.00	
	(iv) Cement, Ceramics, Refractories and Glass	55.00	
	(v) Electrical Industries	80.00	

			Rs. in crores
vi) Electronics	75.00		
vii) Textiles	235.00		
viii) Handlooms	60.00		
(ix) Sugar Mill Industry	48.00		
(x) Paper and allied Products	150.00		
(xi) Alcohol	5.00		
(xii) Vegetable Oils	10.00		
(xiii) Rice Mill Industry	35.00		
(xiv) Fruit Processing Industry	5.00		
	1291.50		1291.50
	Total:	Rs.	2255.00

PERSPECTIVE PLAN PERIOD (1972–84)

Investment (Rs. in crores)	*Gross Value of output (Rs. in crores)*	*Value added by manufacturer (Rs. in crores)*	*Employment Potential*		
			Direct	*Indirect*	*Total*
2255	3000	1600	7.5 lakhs	20.00 lakhs	27.5 lakhs

B. Projection for the Fourth and Fifth Plan Periods and the Sixth Plan Period

Investment Pattern

I. Seven Year Period (1972–79) (Last two years of the Fourth Plan and Five Year of the Fifth Plan).

Rs. in crores

(i) *State Sector and Joint Sector*

Concast Plan at Arkonam;
Sponge Iron Unit at Arkonam;
Cement Plant at Alangulam;
Tyre Plant at Ramanathapuram;
Fertilizer Plant at Tuticorin;
New Unit for Chemicals at Tuticorin;
Forging Plant at Arkonam;
Modernization of Sick Mills;
Assistance to New Units in Backward Areas

Rs. in crores

(ii) *Central Sector*

Salem Steel Plant ;

Expansion of Heavy Electricals Plant at Tiruchy ;

Hindustan Teleprinters at Madras ;

Defence Establishments at Avadi ;

Tiruchy and Arkonam ;

Neyveli (Mine Cut and Fertilizer) ... 450.00

(iii) *Private Sector*

Expansion of Existing Sugar Factories ;

New Sugar Factories ;

Expansion of paper, rayon grade pulp, staple fibre,

Caustic Soda, Aluminium, PVC, Cement,

Automobile ancillaries, tyres etc. ... 300.00

Aggregate outlay ... 1070.00

I. Five Year Period (1979-84) (Sixth Plan)

(i) *State Government and its Agencies*	375.00	
(ii) *Central Sector* Expansion of Steel Plant at Salem ; Smelter for Producing Copper and Zinc ; Plant for Seamless Pipes ; Desalination Plant ; Expansion of Units in Telecommn. and Electronics	335.00	
(iii) *Private and Co-operative Sectors*	475.00	
	1185.00	1185.00
Total Investment for the twelve-year Period ...		2255.00

ANNEXURE II

Special Recommendations made by the Task Force on Large Industries for accelerating the industrial development of the State.

The Task Force has made a set of special recommendations for accelerating the pace of industrial development. These are summarized below:

1. Development of Agro-based Industries :

There has to be a bold initiative in further developing agro-based industries not only to take care of the needs of the State but to contribute to the national pool. In particular, the Sugar industry has to be developed in an integrated manner, leading to quadrupling of production during the period 1972-84. A large complex should be established in the State for producing sizeable quantities of Sugar, Alcohol and Paper. The use of bagasse as raw material for Paper should be encouraged and furnace oil supplied to sugar mills on a duty-free basis.

2. Modernization of Textile Units :

Special facilities should be provided for Textile Units to help them to implement modernisation programmes and to retain their share of the home-market over a period.

3. Development of Backward Areas in the State :

Backward areas in Ramanathapuram, Tirunelveli, Kanyakumari, Dharmapuri and North Arcot Districts should be developed, special attention being given to regional resources and the attitude of of labour. Several financial and other incentives should be provided to promotees of industries in these areas. Encouragement will be in order for the sponsoring of salt-based, mechanical and electronic industries—in the shape of attractive terms for power consumption for limited periods and rebate in sales-tax for those engaged in producing sophisticated engineering goods.

4. Supply of Raw Materials :

The importance of maintaining Stock Yards for Coal, steel and other raw materials at Strategic points cannot be over-emphasized.

5. Power Units for Industrial Establishment :

Industrial units should be permitted to instal their own captive power units if this would provide good insurance against short-falls in production in the event of emergencies resulting in failure of regular power-supply. The present practice of levying duty on power generated and consumed by industrial units needs revision.

6. Water Resources :

There is an urgent need for the assessment of the water resources available for industrial, organizational and potable purposes. A Cell should be organised to make a systematic study of river and underground water-resources and to recommend how best to make savings in the use of water for various purposes. Projects will have to be undertaken for the Desalination of seawater.

7. Transport Facilities :

Transport bottlenecks are likely to continue for a considerable time. The State should evolve, in consultation with the concerned industries, arrangements for the regular movement of raw materials and components by road and rail. An effective method of subsidising movement by sea should be devised. The prospects of the Railways meeting the growing needs are rather dim.

8. **Leadership in Projects :**

Technical experts should be placed in in charge of Central and State Projects. There would be advantage in associating the State Government with the management of Projects in the Central Sector, through the interplay of regional considerations and priorities.

9. **Technical Know how :**

Where know how is obtained from foreign collaborators, the latter should be required to agree to sub-contract the know how to a wide range of interested users.

10. **Distributive Mechanism for Goods and Services :**

It is essential to think in terms of Joint Stock Companies which will buy raw materials, stock them and supply them to the industries and buy the finished products from them, paying the processing charge, for distribution to bulk-consumers and general consumers. This will facilitate stability in the prices of essential commodities.

11. **Techno Economic Studies :**

There should be an efficient arrangement for arriving at a regular census of production and collection of data pertaining to large and medium industries. Periodic techno-economic surveys of the different Districts in the State should be carried out. A Special Evaluation Cell in the Directorate of Industries and Commerce will continually watch the progress of industries in the different sectors.

12. **Joint Sector Projects in Overseas Location :**

Joint Sector Projects of interest to countries in South East Asia, Africa and the Middle East should be encouraged. The State Government should play a helpful role in providing entrepreneurs and concerned experts with assistance to conduct negotiations and surveys and carry out preliminary work.

13. **Packing Industry :**

Early steps are called for to develop the package industry and to ensure that the distribution of goods does not suffer for want of packaging materials. The scope for establishing Jute Mills in Tamil Nadu for meeting the needs of packaging and other materials of industrial consumers and the agricultural sector should be fully explored. Intially the Jute Mills may obtain their requirements from outside the State but the feasibility of jute cultivation in Tamil Nadu in regions where water is available should be examined and an attempt made to bring a sizeable acreage under this crop.

14. **Research and Development :**

Special emphasis should be placed on Research and Development work and the State should take steps to pool research and development facilities on an industry-wise basis by establishing institutes, with contributions from the Industries and the State and Central Governments. The Government should give serious consideration to the starting of a full-fledged Management Institute for training managerial and technical personnel.

15. **Enlightended Labour Policy :**

The policy pursued shonld be such as to lead to an improvement in products and prevent avoidable interference in operations.

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Summary of Discussion

In the discussion of the paper at the seminar in the seminar room at the Madras Institute of Development Studies on March 29th under the chairmanship of Dr. Alladi Ramakrishnan, Director, Matscience, Madras, Prof. S. Sampath introducing the paper, described it as a summary of the Task Force Report on Large and Medium Industries in the frame of the Perspective Plan for Tamil Nadu and his observations and comments on its overall approach.

The report surveys fourteen areas of activity in various sectors in Tamil Nadu, the projections for growth and development during the twelve years of the Perspective plan, the investments that would be required, in a phased programme and recommendations for resource mobilisation at Central, State and private levels. Further considerations are the availability of water, power and land. The State has become an increasingly important and forceful participant in Industrial development and its principal instruments are, TIDCO for joint sector projects, SIPCOT for backward areas and TIIC for the private sector. Areas of special importance in terms of development potential are the agro-based industries and the electronics group. The report sets considerable store by the progress achieved by the State during the last fifteen years in different industrial fields. There has however not been a systematic analysis of performance in terms of targets set during various plan periods nor has there been an attemtpt to quantify and study variations in efficiency and productivity. While there is emphasis on the spectacular industrial growth, there is no reference to the labour unrest which has plagued the State. The role of large industries in achieving the chief object of the Plan—An Attack on Poverty—has also not been spelt out.

In the subsequent discussion, it was pointed out that the report had largely based its expansion programmes and recommendations on existing trends. The resource base of many of the industries included in the development programme had not been examined. Similarly, fixed and working capital requirements had also yet to be sufficiently analysed. Industries such as sugar, vanaspati, textiles and cement, commanding raw materials within the State either completely or partially were in terms of investment a small group. Concentrated promotion of research and development was a pre-condition for attracting industry and capital to the State and for maintaining the progress achieved so far and on this there was insufficient emphasis.

Industrial development in the State to date has been pragmatic. The Task Force report has not based its recommendation through the use of cost—benefit analysis in planning the expansion of existing units or creating new ones. It is imperative that continuous ongoing analysis of the functioning of sample units in various sectors be carried out to keep industries from going into the red. The instrument suggested is either an evaluation unit built into the State Planning Commission or functioning as part of the industries ministry. Further, no information was available on inter-industrial input-output tables and unofficial estimates showed considerable underutilisation of capacity.

The possible constraints likely to arise were discussed against the background of increasing pressure on power and water resources, transport dislocations and periodic shortages in the supply of essential raw materials from outside the State. Coordination between State and Central planning on these issues and carefully

worked out policies of inter-State cooperation were a necessity. Water resources and power generation and utilisation were issues affecting development and progress of more than one State in a given region and had to be tackled on a regional and national basis.

The availability of manpower for the development envisaged in the Task Force report was considered adequate even in areas which required specialised and technical qualification. A possible disadvantage in the maximum use of R & D was the low literacy levels in employable age groups. A crucial factor in development and utilisation of manpower potential was a scientific approach to the identification of various kinds of talents and aptitudes and fostering their use when these were at their best.

In assessing the impact of large industries on the basic planning goal-the abolition of poverty-it was pointed out that large industries were not as a rule directly employment intensive. A further point made was that the remarkable industrial growth of the State was due to a policy which encouraged the growth of medium and small industries.

The confident approach made to the growth of large and medium industries during the period of the Perspective Plan is justifiable within the limits of previous experience. Future programmes of expansion and entry into fresh fields however, must rest on sound foundations. Coordination within the sector, integration with overall State and national plans, optimum use of resources, a strong research and development base, adequate evaluation and monitoring instruments—are some of the features which need careful working on; the list is by no means exhaustive. A hopeful realism is essential for the next step ahead-"that of lifting the crushing burden of poverty from the backs of our people".

THE COSTS OF EDUCATION AND THE SUPPLY OF TEACHERS*

The Costs of Education

Within the financial frame of the educational enterprise, distinctions must be made between educational investment, educational expenditures and education costs. In the educational enterprise, there are also incomes comparable to those of other business undertakings, though such educational incomes are not the subject of analysis in this note.

Investment: Investment in education is the global resources from the State, foreign aid, non-governmental bodies and individual citizens put into the educational enterprise. It is usually expressed as a percentage of the Gross National Product (GNP) as a post hoc exercise, as an instrument for analysing and regulating intersectoral allocations within a national plan, as a means for inter-country comparisons of the comparative educational effort, and as a norm or desirable target of the educational contribution to national development. Most of the affluent countries are investing well above 6 per cent of their GNP in education. The developing countries who started the sixties with around 3 per cent of their GNP invested in education have now moved upto 4 to 5 per cent. In terms of the proportion of of the State budget allocated to education, the sixties have averaged a 13-15 per cent increase in such allocation. This investment approach to educational outlays is basically sound, as it is a reminder that educated and trained persons are a production factor like physical capital, that they are a produced means of production and that the economic and social machine cannot run without this human capital, any more than it can without land, water, machines and other inputs. This argues that more of a place should be given to the norm or target aspect of educational investment in national development than planners are willing or accustomed to. The use of the investment tool expressed as a percentage of GNP for inter-country comparison purposes involves using the correction formula for distortions introduced by unreliable or incomplete statistics, the exchange rate unrealities and the differing stages of national development that each country represents. On the other hand its use in inter-sectoral comparisons within a country's economy raises sharply the question as to whether a straight unilinear increase of educational investment in the seventies based on the justified trend of the sixties will make for national development or whether it will act as a bottleneck to such development. In my own State in India, the education sector of the twelve year perspective Plan has some prophetic words on this point: "The State of Tamil Nadu has increased its education budget from Rs. 150 millions in 1961 to Rs. 890 millions in 1972, entailing a rate of increase of over 45 per cent per annum' while the State Net Domestic Product increased at a compound rate of 3.5 per cent over the same period. The State cannot continue this rate of educational investment over the Perspective Plan period without education

* Extracts from a paper submitted by Dr. Malcolm S. Adiseshiah to the Commonwealth Conference on Teacher Education, organised by the Commonwealth Secretariat, Nairobi, from 26th April to 11th May 1973.

becoming a constraint on development." In fact all evidence that we have at hand points to a slowing down in the past rates of increase. The UNESCO Education Commission points to the fall in the rate of increase of education allocation for 1967-68 compared to the mean annual increase rate for the period 1960-68, to 9.2 from 10 0 in Africa, 10 8 from 11.3 in Latin America, and 12.1 from 14.1 in Asia. The moral of this declining current and future trend in educational investments in the poor countries is the need to assess carefully our educational cost structure and redeploy our expenditures in order to move towards a low cost and increasingly productive structure.

Expenditure : Expenditures in education refer to the resources flow into and out of the education sector and are the financial tool that governments and ministries of education are most familiar with. Expenditures are usually divided into capital and recurrent, into direct and indirect and by level and form The particular expenditure classification adopted is empirical, based on history and experience and is usually a part of the country's accounting conventions. One country may class libraries under capital, another recurrent. Research, inspection and evaluation costs are in some cases classed under direct expenditures and in others under indirect. Accounting conventions usually place the retirement benefits to be paid during the year to retired education staff under recurrent and direct and indirect expenditures, while that relating to those in service is not included under any item Similarly replacement of furniture and equipment appears under recurring and direct and indirect expenditures as do maintenance of and repair of buildings and equipment. But the depreciation charges for the latter group usually appear nowhere. Capital expenditures usually cover the expenditures on land, survey and design charges, the expenses of buildings and works and all durable furniture and equipment.

These classifications are used in public expenditures on education. That is, they refer usually only to the expenditures incurred by the State through the Ministry of Education. And in this regard the ministry is required to compute the public expenditure trend for five or six years ahead to fit into the medium term plan of the country. For such computational purposes, simple formulae are usually adopted. One such is to establish the expenditure per pupil at each level of education, which would be a function of the average annual salary of a teacher (a), the pupil teacher ratio (t), and the expenditure on all non-teacher items expressed as a percentages to the average annual salary of a teacher (r), so that the expenditure per pupil $= \frac{a\,(I+r)}{t}$. The total expenditure for any year would then be the sum of the enrolment multiplied by the per student expenditure for each level and type. In using formulae like this to compute future public educational expenditures, allowance must be made for changes in prices and changes in each of the quantitites used in the formula. This latter group of changes-increase in teachers' salaries and retirement benefits, larger school meals, changes in text books and equipment, and the teacher pupil ratio -is in one sense given and in another represents alternatives between which deliberate choices can be made in determining the quantum of future expenditures. For the State education budget in any given year, however, these elaborate calculations are not necessary in establishing the various expenditure heads. From one educational year to the next the expenditures are committed for the most part-90 to 95 per cent—for teachers, maintenance of building and equipment, mid-day meals, transport, inspection and teacher training,

so that it is only with regard to 5-10 per cent of the estimates of expenditures that there are some limited choices for variations or innovations available to the authority. It is therefore essential that public educational expenditures should be planned for fairly long periods of time —well beyond the normal medium term State plan of 5 or 6 years—for periods of 15 to 20 years in order to increase the range of choices. This points to the other use of the formula employed in public educational expenditure computations which is to provide some rough and ready indicators of the mix of the various factors and levels and forms of education in the immediate past as a guide to possible or desirable changes in future expenditure patterns. It could indicate the desirability in the future expenditure estimates of increasing non-teacher costs and/or diverting more resources to certain levels—primary or secondary, and forms—pre-vocational, vocational and non-formal. Whatever be the classification formulae adopted in public expenditure estimates, one of the most difficult tasks is to arrive at a precise and comprehensive set of figures concerning all educational expenditures. The educational expenditures incurred by the other departments of government including the military and the police, the local authorities such as village panchayats, and district boards, by voluntary bodies such as the Moslem, Christian, Buddhist and Hindu educational agencies, by business undertakings and above all by parents and guardians are difficult to collect and collate and even more difficult to fit into any known expenditure classification without running into the kind of problems that are faced when dealing with the non-monetized sector and those involved in double counting. And yet given the financial constraints that education is facing that were referred to earlier, it is necessary to establish a precise national table of educational expenditure by all involved-the State government, local authorities, non-government bodies and parents and guardians-as the only means of undertaking expenditure utilisation and effectiveness analysis, going on to disaggregated cost benefit studies. Such studies aimed at increasing the productivity of education could be the major means of stretching all available resources to the maximum. The moral of this review of the second element in education's financial frame-expenditures-is that governments must prepare two annual and plan period expenditure statements-one, as it does at present, the outflow of the State resources into education ministry's budget and the other a comprehensive expenditure table of all educational expenditures by other government departments, local bodies, business firms, private agencies and individuals.

Costs : Educational costs are the costs of not producing more and better food which our people desperately need, minimum housing which our people do not have, as well as the incomes and wages given up by those in full time school attendance. This import of educational costs was partially referred to in the discussion on investment, is the technique used when analysing education as a sub-system of the economic and social system, and could be the basis of determining the productivity of and allocation to the educational sector in relation to those of the other sectors of the national economy. From this point of view if the increasing rate of drop-outs from in-school system and the crisis of educated unemployment are taken as oversimplified indicators of the efficiency of the education system, it seems probable that the marginal productivity of education is declining compared to that of the other sectors, that the ratio between the costs of education and its contribution to national development is falling.

Correlative to this wider definition of educational costs, is an internal definition of the costs of an educational programme based on a chosen unit. On the basis of either the public expenditure or the comprehensive expenditure table discussed earlier, it is essential to establish the unit for costing purposes. These units could be the teacher unit cost varying with the teacher pupil ratio, teaching hours, salary and enrolment levels ; text books and teaching materials unit cost depending on the quantity and prices of books and school equipment; school meals and health unit costs varying with level of poverty of the parents and population density: maintenance of building and equipment unit costs depending on the quality and the number of building and equipment unit costs varying with land, design and construction costs and rate of utilization; and administrative unit costs, varying the management system and the wage structure. There are many refinements and complexities in developing this unit cost tool. Such unit cost computation can be simplified into per student cost, per class cost or per school cost or can be computed more comprehensively as in the UNESCO Asian Education Model. In the model the per student recurrent cost for any level of education is $N = Na + Nb + Nc + Nd + Ne + Nf + Ng + Nh + Ni$, where $Na =$ per student teacher salary cost, $Nb =$ per student personal cost other than teacher salary, $Nc =$ per student cost of general administration, $Nd =$ per student cost of maintenance of buildings and equipment, $Ne =$ per student cost of books, $Nf =$ per student cost of school meals, school health, $Ng =$ per student cost of transport, $Nh =$ per student scholarships costs, $Ni =$ per student cost of sports and other educational supplies and expendable equipment. In establishing any of these units, assumptions must be made for each of the constituents in relation to the conditions of the country. The major purpose of this type of unit cost instrument is to test the internal efficiency of the education system and use the results in arriving at some approximation of the cost benefit relationship in the system. Whatever the unit adopted and used, it will be found, that the key variable in all educational cost analysis is the number of teachers and their total emoluments followed by the number of students and the cost of building. The fact that the teachers costs are the preponderant element in the educational cost structure, amounting in non-professional education to over 80 per cent, can be illustrated by the fact in a country like India capital expenditure in school education which is currently 2.2 per cent of total educational expenditure is expected to rise only to 2.5 per cent in 10 years from now. Similarly non-teacher costs vary from 11 per cent in primary schools to 42 per cent in colleges. It is only in vocational and professional education at the secondary and tertiary levels, that the teacher and non teacher costs are equally divided. So too capital costs in higher education are around two to three times that of school education. More generally the capital costs in all countries is a fraction of total educational costs. In China it is 14.4 per cent, Ceylon 4.9. per cent, U.S.A. 19.7 per cent, U.K. 18 per cent, with Japan and the Federal Republic of Germany having the highest at 24 and 29 3 per cent respectively. The moral of this rather brief discussion of educational costs is that the major cost constituent at all levels and forms of education is the cost of teacher.

Supply of Teachers :

For all countries and particularly for the developing countries, the future trend is likely to be a tight teacher supply position and rising teacher costs. The teacher supply position will worsen because of the acceleration principle which operates in the educational area. That is, the increa-

sing enrolments that the countries face due to the population explosion of the fifties and sixties together with the increasing social demand for education mean that if annual enrolments increase by 5 per cent, a teacher's service averages 35 years and retirement and death average 5 per cent of the teaching force, the supply of teachers will have to increase by 50 per cent to meet the 5 per cent increase in enrolment. On the other hand the rising teacher cost factor is not only a consequence of the acceleration principle in relation to teacher supply, it is even more due to the structural problem the developing countries face. First there is the problem of the relation between teacher's salaries and the average wages in the country, not to speak of its per capita income. Second the high price which educated manpower commands in the countries relative to the per capita national product limits its employment market. The education sector like the health system is an area where only educated manpower can be used, making that sector much more expensive than the primary or secondary sector of the country's economy. Third the high wages of the teacher is an indicator of the undersupply of teachers and the high cost of producing teachers. (The rate of return on any form of education always tends to equal the ratio of present value of wages due to education to the cost of producing the educated person). In this view rising teacher costs in the coming years must be taken as a given element in educational planning.

These two features—teacher supply and teacher costs-need some further comment.

Teacher Supply: The UNESCO Education Commission points out that the teacher supply rate during the sixties has been larger than even the education explosion of that period, which ranged from 33 per cent at the primary to 107 per cent at the tertiary levels. During 1960–68 the school enrolment rate increased on an average by 4.5 per cent annually, while the teaching corps increased at an annual average of 4.7 per cent. The total number of teachers increased by 50 per cent from 12.6 million to 18.2 million during this period. Two comments must be made about this teacher supply phenomena. First this increased teacher supply was a wasteful increase. During this period the percentage of students who rejected or were kept out of the education offered to them was large, and in some countries accelerating. In many countries there are more children out-of-school than in-school, and at current rates of wastage and rejection there will be 230 million children of the age group 5–14 not attending school in 1980. The illiteracy situation where the percentage of decrease is around one quarter of the percentage increase of the teaching force is another indicator of unproductivity of the teacher increase. This comment allows for the fact that there are also other social and economic factors which account for the wastages, irrelevance and low product output of the education system. A second comment is that the teacher in-take now absorbs about one third to one half of second level graduates in all countries. In Europe in 1967 there were 300,000 second level graduates, and 100,000 entered the teaching profession in 1969. The comparable figures for Africa are 50,000 and 30,000 and for Asia 300,000 and 200,000. (This presentation juxtaposes the two figures of second level graduation and the increase in the teaching force. They are not functionally inter-related.) If past and current educational mixes of teacher and non-teacher ratios are continued into the future, the teacher corps will absorb an even larger percentage of second level graduates, reducing the supply potential of other developmental personnel for farm-

ing, fishing, dairying, forestry, small and medium and large industries management, research, and health and other services.

Teacher costs: The teaching costs have been increasing both absolutely and as a proportion of recurring costs. The UNESCO statistical year book for 1970 provides the information on the absolute increase of teacher costs in all countries—both affluent and poor. But the percentage magnitudes and increase of these costs as a total of recurring costs over the years are substantially limited to the poor countries. Thus while, the magnitude or level of teacher costs percentage is around the fifties for Canada, the Soviet Union, Australia, Austria, Czechoslovakia, Japan, United Kingdom etc. (with France and Germany forming important exceptions), it is around the eighties for Africa, Asia and Latin America (with some exceptions like India). Equally while the percentage share of teacher costs has tended to decline between 1956 and 1968 from 69.6 to 56.5 for Canada, from 56.3 to 54.3 for Japan, from 51.6 to 49.8 for the U.K., from 59.4 to 51.4 for the U.S.S.R. and so on, for the poor countries it has risen from the seventies to the eighties or has remained more or less stationary at this high level. To this must be added the teacher supply aid which in 1968 according to OECD annual report amounted to 56,183 teachers from DAC countries to Africa (42,344), Latin America (4,552), and Asia (6,625). Over 60 per cent of this total teacher supply was from France, which may explain the exceptional position of that country in the comparative teacher cost table. Allowing for the fact that countries at the early stage of development have a high cost education structure compared to the cost of producing other capital goods, and that within this frame teacher costs will represent a large percentage magnitude and at the initial stages a growing proportion, the present and future teacher cost trends in the poor countries allow little room for improved school performance. Such performance demands a continuing rise in the non-teacher cost element in the future,—a demand which is negatived by the prospective inescapable increases in teacher costs. This teacher cost increase is also a corollary of educational development, wherein the percentage of low paid teachers declines, while those at higher levels of remuneration increase. Between 1960 and 67, in Europe the percentage of first level teachers declined from 64 to 53, while it increased for the second level from 31 to 40 and for the third level from 4.7 to 6.4: the first level declined for Africa from 86 to 77, for Latin America from 70 to 63 and for Asia from 73 to 58: the second and third levels on the other hand increased for Africa from 12 to 20, and 1.7 to 3.1, for Latin America from 26 to 30 and 4.3 to 6.7 and for Asia from 24 to 38 and 2.7 to 4.6.

Some Suggestions: Faced with this double constraint of the limits to teachers supply in relation to the growing future demand and of the certainty of increasing teacher costs in the years ahead, it is necessary to examine somewhat fearlessly the ways and means of meeting these constraints and providing the work based quality education that the economy and society demand. In this note certain suggestions are made as a basis for further reflection and discussion on this issue.

First within the existing system the teacher-student ratio and teacher qualification requirements can be varied so as to live within an intial ceiling of say a maximum of one third of second level graduates entering the teaching profession declining later to a quarter. The student-pupil ratio for various levels of education is no sacred cow. It can be stretched with no decrease in the quality of teaching and

learning as the Japanese experience shows. I have seen some primary schools there with a ratio of 1 : 50 maintaining high standards of learning achievement, where the quality of knowledge dispensed is very near equal to that acquired and where the drop-out rate is zero. This performance was due to the personal and professional qualities of the teacher, the equipment of the school and the cultural mores of the local community. The usual formula used for computing the teacher supply where Nt = the number of teachers of grade g in the target year, No = the number of teachers of grade g in service at the base year D, r = the annual attrition of teachers of the grade, Yt = target year and Yo = base year, with the result that the addition to teacher supply for any target year is $\frac{(Nt) - (No)}{Yt - Yo} + \frac{(Nt + No)}{2}$ (r) provides all the flexibility needed for varying the qualifications of teachers at various levels and forms of education. For example the graduate teachers may be 2 or 3 or 4 per cent, grade I teachers may be 20 or 22 or 24 per cent, grade II teachers may be 28, 30 or 32 per cent, grade III teachers may be similarly anything between 40–55 per cent. The mix of teacher qualification can be fitted to meet the teacher supply and teacher cost constraints as Ethiopia is planning to adopt in its Educational Reform Plan.

Second it is possible to revise the learning programme in the school as the U.S.S.R. and some other countries have done so that the hours and years of schooling are shortened. There can then be a greater turn around and in-take of students without a commensurate increase in teachers supply. Such a shortened school programme has also resulted in an improved school performance. Here the effective teaching hours can be increased—even doubled—with only a marginal increase in the number of teachers.

Third the learning process can be increasingly centred on self learning techniques under which each person can follow his own learning path, aptitudes and interest. The techniques used would be group self study, group discussion and the various audio and visual means and media of self instruction, which are such powerful instruments of cultural and social development and integration in society today. These techniques are being tried out in several countries on a pilot basis. They must now be generalised. These supplements to the teacher and his direct instructional function will also reduce the total requirement for teachers.

Fourth the additional educational resources that will become available in the future should be increasingly deployed in the new type of learning materials and teaching technologies centred around the work situation in which the majority of school age children who are not in school and the illiterate and semi-illiterate adults are involved. Similarly expenditures on vocationalised education at all levels of school education will help close the current gap between formal and non-formal education (which is always vocational) and in the process give relevance and fitness to the entire learning process in the school system. This development will not reduce the demand for teachers but will demand a new type of pedagogue who will straddle in-school and out-of-school education.

Fifth the teacher must be formed, through restructured pre-service training for those entering the profession and through annual and continuous in-service training for those in the profession, into a new kind of stimulator, guide and learner which the teacher must become. This recognises that the teacher is no longer the only provider of knowledge, since the library, the film, the radio, T.V., magazines and newspapers, youth clubs and early

access to all forms of knowledge and life compete with him. He himself has to be competitive, attractive, widely conversant with all aspects of life. He can no longer teach in an authoritarian and magisterial manner, nor even in an authoritative one, since he cannot claim universal knowledge, nor final certainty in any field or subject, at a time when our truths of today become the untruths of tomorrow. So he is the guide who learns along with his pupils where and how to cull the new knowledge that is to be found everywhere in our growingly complex world rather than the transmittor of knowledge already gained. He is the one who develops the spirit of inquiry among students, which means that he himself will be constantly questioned by them. His training will not centre around methods of instruction and teaching methodologies but on developing techniques, qualities and insights which will make him an educational catalyst, an educator of others and a constant and continual learner. Whether he be a subject specialist or one developing teaching materials, self learning equipment and technologies, he will cover learning in all its forms and places — in-school and out-of-school — and learning to help his pupils to live in the 21st century which is just around the corner. This will raise the costs of teachers and those of the new kind of teacher training while reducing the number of teachers involved. Ivory Coast, Nigeria and Ghana are moving in this direction using the U.S. — U.K. model. So too is Indonesia with the help of Australia as India is planning to do in the Fifth Plan.

Sixth the teaching profession must be widened to include businessmen, farm leaders, engineers, architects, doctors and all those who are involved in the world of work who are anxious and willing to participate in teaching and who will be a major means of closing the gap between the world of learning and the world of work, between the schools and society. This is already happening in out-of-school programmes and is one of the innovations being planned by some countries to bring a sense of relevance into university education. The same demand to participate in teaching comes from the large numbers of para-educational persons — panchayat union presidents, municipal council members, women's organisation members, student groups and a whole host of auxiliaries who are available for sharing in the teaching work load. The teaching profession must shed its growing closed circle isolation and make its teacher training colleges permanent all the year round training institutions where these groups of potential educators can be given short courses ranging from 1 week to 3 months, so that the educational enterprise can be enriched by their service and the load on the current and future supply of teachers lightened.

Finally underlying all these suggestions is the reality of education as being way beyond what is acquired within the four walls of the school or the university, what is acquired at any one period of time of say between the age 5+ to 18+. Education is learning, learning how to learn, learning anywhere and everywhere where a learning experience is to be had. The place may be a school, may be a hospital, or a co-operative farm, or a tele club, or a church or mosque or the home library, factory, garden or kitchen or a political party. The means may be a priest, a broadcaster, a teacher, a book, a group discussion. In this view the school loses its false prestige as the only or major temple of learning. The teacher loses his unbecoming monopoly as the only purveyor of knowledge. The school becomes disaggregated and structured with multiple entry, exit and reentry points to enable its denizens,

both students and teachers, to move freely between the school, the home, and the market place, because all these are at the same time learning experiences and working places. There will then be no false and forced distinction between in-school learning and out-of-school learning. There will be just learning, learning which is continuous, lasting over one's life, learning which is never ending because every day and in every way something new is happening, learning which is comprehensive because it recognises no age—child and adult, no sex—men and women, and no profession - teacher and taught. All are learners all the time. It is in this direction that all our societies including our educational sub-systems must move and it is that that we must now turn into programmes, structures and systems.

BOOK REVIEW

Techniques of Perspective Planning

Edited by

Dr. Malcolm S. Adiseshiah

In the history of Indian Planning, the preparation of perspective plans is a recent development. The formulation of such plans at the State level is a still more recent development. Tamil Nadu has the distinction of being the first State to draw up a Draft Perspective Plan Frame. All planning-whether perspective or medium term-is evolutionary in character. This being the case, a full understanding of the techniques of perspective planning and their applications to a given area is a desideratum for efficient planning.

It is from this point of view that the present monograph under review, which, is a report of a two day seminar held at Madras on the 20th and 21st October, 1972 should be viewed. The Draft Perspective Plan Frame is the basic paper for discussion and is supported by eleven more papers by planners, businessmen, academicians and government officials on such crucial topics as sectoral programming, District Planning, Area Programming, Constraints and Resources and Participation in Planning. Naturally the papers though uniformly good are of varying merit. A preamble to the basic papers is provided by the preface in which Dr. Adiseshiah gives an excellent definition of perspective planning and sets down the salient features which distinguish it from medium term planning.

Though the Draft Perspective Plan frame is only 16 pages, it is obvious that a great deal of thinking and effort have gone into its formulation. The plan lays down firm objectives to be aimed at, the broad strategy to be employed for their achievement and indicates the magnitude of the development task sector-wise. Of the seven stated objectives viz. (1) doubling real per capita incomes, (2) achieving full employment, (3) eliminating the worst forms of poverty, (4) ensuring social justice (5) speeding up the process of Social change (6) promoting cultural activities and community development and (7) decentralized planning, it is objectives 2 and 7 which give a new orientation to the State Planning. At first sight, the objectives may appear to be conflicting as pointed out by Prof. T. S. Venkatasamy, but this would be the case only in the short run and not necessarily in the long run. At the time of formulating the medium term plan, the planners will have to determine the priorities to be given to the conflicting objectives.

For the objectives to materialise, a growth rate of 7.6% is deemed necessary. The Plan frame concedes that the targeted rate of growth is very ambitious but appears to pin its hopes on the decentralized formulation, implementation and resource mobilisation as the major instrument to tip the scales in favour of its aspirations. How far decentralised planning would deliver the goods depends on, to what extent it would be successful in generating a "Plan ethos" at all levels. Planning from below has not had much

success so far in India because the organisational set up and skills required for planning at the district level were lacking Would the newly constituted District Planning cells develop the skills and leadership required for the task is the moot point. There is no doubt this is an experiment worth trying.

Dr. C. T. Kurien's paper is thought provoking. His consistent reasoning and clear analysis bring the whole problem of abolishing poverty into new relief. He points out that "it is in the very nature of an anti-poverty programme that it cannot be spelt out in terms of global aggregates such as the required rates of growth, the necessary quantum of investment". It is increasingly felt that attainment of physical and financial targets may fail to meet essential needs. In other words the objective of doubling per capita incomes may be inappropriate for solving a basic social problem like abolishing poverty. However, the District Planning cells can in their plans provide for schemes to solve the basic social and economic problems of their areas. These schemes would in turn lead to determining a suitable strategy, an assessment of resources and the setting of targets and objectives. In this manner, the starting of the planning process with the identification of social and economic problems may be made to yield overall targets of growth and investment instead of the other way round. What is needed is a change in the approach to planning.

In a perspective plan there is no need for detailed secotral planning and inter—sectoral consistency. But in the preparation of a Medium Term plan sectoral programming is a crucial and difficult task. Dr. D. Bright Singh traces in meticulous detail the process of disaggregating an aggregate plan into sectoral plans and discusses the relative merits of the available tools and techniques for achieving inter-sectoral consistency. What impresses one in this paper is the clarity and careful assessment that are brought to bear on a complicated and little understood topic in planning.

The only paper on District planning by an administrator puts down in a realistic manner the nature of the problems that confront a district planner. The district plans are going to be the basis for the formulation of sectoral and State plans and would also determine to a large extent the success of the plan. Therefore, the strengthening of these planning cells with the required skilled expertise in plan formulation and implementation needs to be given top priority.

Under "Area Planning" Thiru Eric Da Costa makes out a strong case for the adoption of dry farming by the backward regions. The neat methodological approach to the problem deserves to be mentioned. Dr. V. Shanmugasundaram's paper gives an account of the existing and contemplated industrial complexes in the State and proposes some useful criteria which could be used in their evaluation.

On the subject "Constraints and Resources" the authors identify the factors that are acting as constraints and suggest measures for improving resources mobilization. On the whole, perhaps, the constraints have received more attention than ways of resource mobilization. The areas in which universities could effectively participate in the planning process are suggested by Dr. A. Ramaswami.

The precise reporting on discussions and the neat summing up at the end of each session add to the value of the publication.

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5. A Guide to Research in Economics

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